Textile World

JANUARY, 1943

INFRA-RED DRYING
FEATURED IN THIS ISSUE

What IS the "Improved" Way of Doing Business?

The "usual" way of doing business requires extending terms of 30, 60 or 90 days to your trade. Your customer naturally wants the use of your money for the customary period of time. This is the "usual", but not always the "improved" way of doing business.

Instead of tying-up working capital in accounts receivable, it is both possible and practical to receive cash as goods are shipped. Your customer gets his regular terms and you get immediate cash through Commercial factoring. Besides, it eliminates credit losses, collection expense and reduces bookkeeping costs.

Why not learn more about this "improved" way of doing business? Write Commercial Factors today!

COMMERCIAL FACTORS CORPORATION

Fred'k Vietor & Achelis, Inc. Established 1828
Schefer, Schramm & Vogel Established 1838
Peierls, Buhler & Co., Inc. Established 1893

TWO PARK AVENUE, NEW YORK

SEVENTY-SEVEN FRANKLIN STREET, BOSTON

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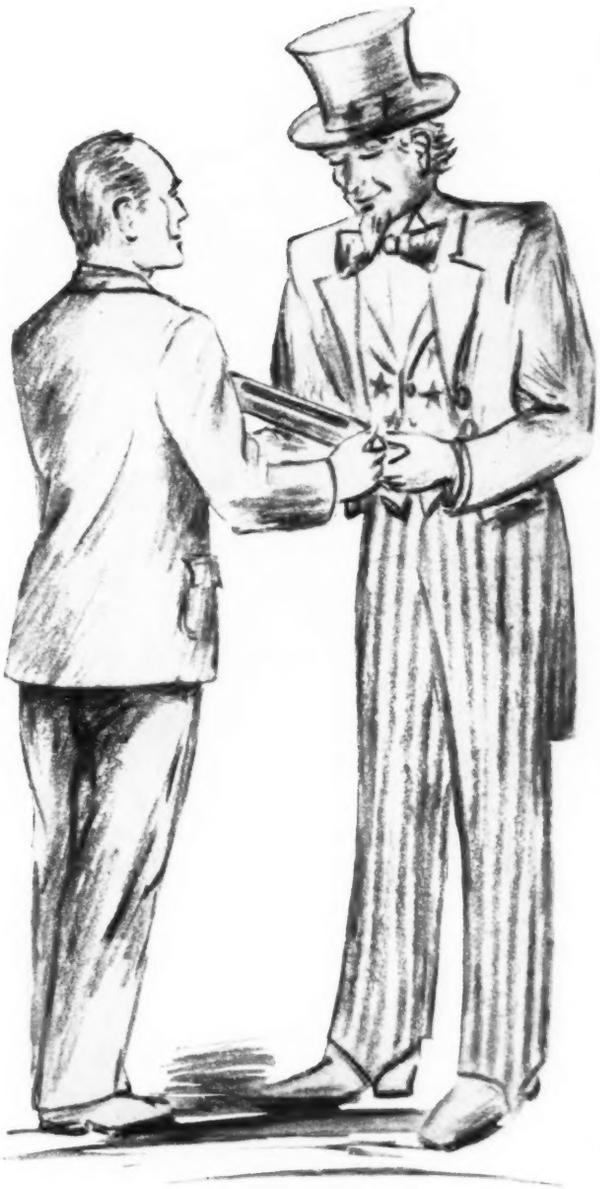
Draper Research

Has Produced

A Laminated Dogwood Shuttle



That is Proving as Good as
the One-Piece Dogwood Shuttles
You Are Now Using

It was designed to meet the Needs of our Mills that are threatened with a Handicap to their War Efforts by a Shortage of Dogwood.

Because Winning the War calls for Co-operation and Because Good Shuttles are Necessary in the Weaving of Fabrics Needed by Our Armed Forces, we are reserving to ourselves no special rights to this Shuttle.

We Offer It

to the Industry
to All Shuttle-Makers

If it proves the solution of the impending problem and helps the Textile Industry in its War Effort, we will be amply repaid.

DRAPER CORPORATION

Hopedale Massachusetts

Atlanta Georgia

Spartanburg S C

THERE WILL ALWAYS be an "old home," its memory forever deep in the hearts of everyone. Our privilege is to keep its spiritual fire burning, constantly shedding its warm glow against the day our boys return from the many fronts. By showing unselfish devotion day by day throughout this New Year we shall prove worthy of this trust.

HOWARD BROS. MFG. CO.

Harry C. Bdey.

President

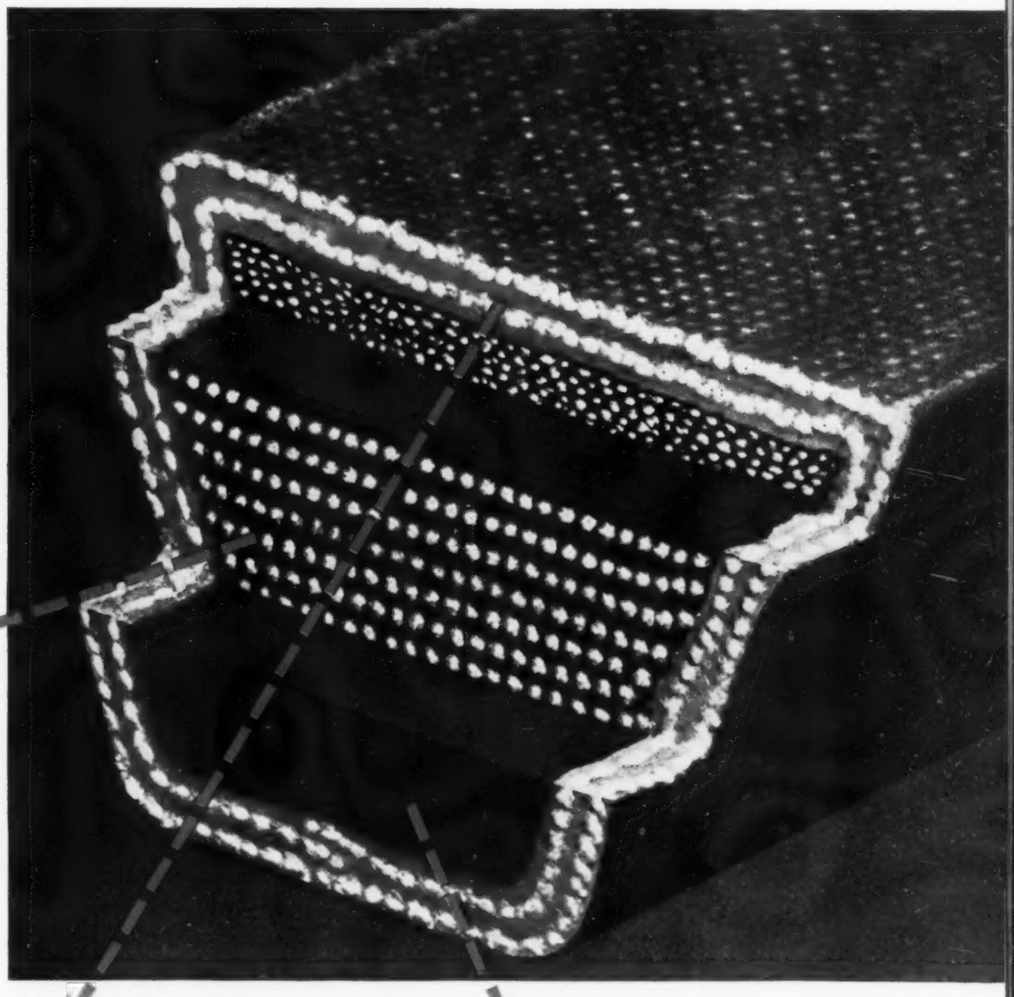
Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles.

Anatomy of Maintenance

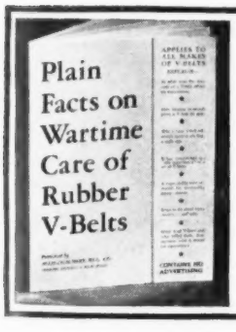
WARTIME V-BELT

You'll find this Cutaway of the new, advanced Texrope Super-7 well worth a Moment's Study... for how it's *Built* tells you a Lot about how to *Care* for V-Belts — whatever "Make" you Use! And proper Care of the rubber V-belts driving around 70% of America's production machines is a Wartime *must!*

V-Day needs every V-Belt



MUSCLE.. The 50% stronger cords and 20% *more* cords produced by the Flexon process give the new Texrope Super-7 extra muscle. To protect the pulling strength of *your* V-belts — regardless of their brand — keep them pulling *steadily*... without the slipping and grabbing that can jerk the life out of V-belts. That means keeping proper tension. Good rule-of-thumb for measuring it: "When struck with the hand, properly taut V-belts have an alive springiness."



Free!

Every engineer and executive should have a copy of this valuable new handbook in his technical library. It's packed with timely facts... applies to *all* makes of V-belts. Send for it today!

SKIN.. Texrope Super-7's tough, new Duplex-Sealed cover protects the inner belt structure against grit, grime and moisture. And what protects any V-belt's *cover* is — maintenance! So here are 3 rules for care of covers... 1. Keep grease or oil from reaching them — quickly remove it with a solvent if it does (*never* apply belt dressings to rubber V-belts!); 2. If gritty dust threatens abrasive wear, shield your V-belts; 3. Maintain proper tension to prevent slip and heating.

PAD.. Just as the bones of the human foot "ride" on the sole's pad of fat, so the pulling cords of a V-belt "ride" on a pad of rubber... which eases them around sheaves. Texrope Super-7's pad is of special, cool-running rubber which combats heat, dangerous enemy of rubber. *You* can fight heat by preventing misalignment in your drives. When present, it subjects the sides of V-belts to needless rubbing, sharply raises belt temperatures. So keep the shafts of drives parallel, sheave grooves in line.

☛ ***When you do Need new V-belts, invest in the Best...Texrope Super-7!***

A 1545

ALLIS-CHALMERS

WE WORK FOR VICTORY — WE PLAN FOR PEACE

TEXROPE* SUPER-7 V-BELTS

*Trade mark registered U. S. Patent Office. Texrope Super-7 V-Belts are the result of the cooperative research and design genius of two great companies — Allis-Chalmers and B. F. Goodrich — and are sold exclusively by Allis-Chalmers. Available in all sizes.....½ h.p. to 2,000 h.p.

Labor Shortage

Comments by Henry G. Lord

"The United States Employment Service has sent out a telegram to all the State Departments of Labor asking them to give publicity to the fact that "because of a present million and a half shortage, both skilled, and unskilled, in war industries, with an increased army coming, Nathan A. Smyth, Assistant Director General of the U. S. Employment Service, is mailing to all community labor boards instructions to prepare and publish in every city of the country lists of non-essential positions now held by men that could be filled by women. The result will be that men failing to get out of such positions of their own accord and take up essential work will be looked upon as slackers. The order is intended to force the hand of both non-essential labor and the employers thereof. The lists probably will include clerks and office help, ticket sellers of all kinds, attendants and similar occupations. . . . Please note that the publication of the lists is to be progressive in character, with the lines drawn tighter from day to day as various occupations are combed for men."

The above news item appeared in Textile World of October 26, 1918. It would be just as timely and appropriate for January, 1943.

On top of the labor shortage, in the autumn of 1918, came the terrible world-wide influenza epidemic. It swept through the armies and civilian population in Europe and crossed the Atlantic to wreak havoc in the United States. Many thousands of troops and civilians died and industries were crippled. May we be spared from *that* scourge.

The labor problem became very acute in the summer of 1918. The shortage was estimated to be 25%.

The demand for women to take the places of men took a different direction from what it is taking today. There always has been a large percentage of women in the textile mills, but women were not taken into other war industries to do men's work to the extent that they are now. They very generally replaced men in civilian and service work. Women took the place of men as elevator operators, street car conductors, taxi drivers, ticket sellers, waiters, attendants, clerks, office boys, messengers, etc. Many continued in some of those employments.

The Textile World staff was badly depleted in 1917 and 1918. Out of a group of seventy-five, fifty of whom were men, fourteen joined up.

It was particularly difficult to get office boys. It occurred to me to hire an older man who would not be called for war work. So we took on "Mr. Williams," quite a distinguished-looking grey-haired man in the sixties or seventies. No one ever called him anything but "Mr. Williams." He was much too dignified to be called by his first name. He dignified the office boy's job and wasn't ashamed of it. When he was sent on an errand, he was probably taken for the president of the company and always got an audience. I never had a more satisfactory office boy than "Mr. Williams."

There may be many similar developments as the labor shortage becomes more acute. Thousands of older men and women, capable of doing good jobs and eager to help the war effort, have been denied the opportunity to work in the war industries. They will give their best and be grateful for the opportunity to serve in the civilian army until the war is won.

HENRY G. LORD, *Vice-President of McGraw-Hill Publishing Co. and Founder of Textile World*

SUNOTEX OILS

BOOST SLASHING SPEED OF PARACHUTE MATERIAL BY 60%

In ever-increasing numbers on the far-flung battle fronts of the world come the paratroops—spearheads of lightning invasions. And for the most important part of their equipment—parachutes—we can thank the Yankee ingenuity of the men in our textile industry for supplying them with more and better "skyhooks" . . . faster.

An outstanding example of the advancement made in the perfection and production of more Nylon for parachutes is that of a New England processor. Slashing was slow . . . production poor . . . and finished products not up to desired standards. But troops had to be equipped! He called in a Sun Textile man—one of those Doctors of Industry. A revised formula was recommended . . . previous competitive products discarded for SUNOTEX RS 48. Slashing speed was increased from 20 to 32 feet per minute . . . warp condition improved . . . and weave room worries stopped.

This is another example, typical of what Sun Doctors of Industry have achieved in many textile plants. Their services and the products they have to offer for processing wool, rayon and Nylon . . . are yours to use to improve your production. Get in touch with your local Sun Textile man today . . . or write . . .

SUN OIL COMPANY—Philadelphia

SUNOCO

SUN PETROLEUM PRODUCTS *HELPING INDUSTRY HELP AMERICA*

. . . . to achieve the ideal in continuity of production

Saco-Lowell-ize*

In the coming post-war era, with the return of a renewed competitive market, production costs will again be of vital importance. Routines which necessitate needless handling and transportation of material—equipment which is wasteful of stock, costly to operate and maintain, must be replaced with more effective and efficient machinery and methods. ¶Today many progressive mills are planning ahead—preparing blueprints, assembling data and other factual information for a program to Saco-Lowell-ize* immediately with the return to normal conditions. In this work Saco-Lowell engineers are available for consultation—ready to cooperate with your own mill staff in preparing the necessary data now for such a post-war program.

* **1.** *To utilize floor space so as to achieve the ideal in continuity of production.* **2.** *To coordinate all successive steps in processing.* **3.** *To reduce waste, spoilage and useless transportation of stock.* **4.** *To attain the greatest economy in maintenance and operating costs.*

SACO-LOWELL SHOPS

60 BATTERYMARCH ST., BOSTON, MASS.

Charlotte, N. C. *Greenville, S. C.* *Atlanta, Ga.*

SPEED PRODUCTION AND CUT YOUR OPERATING COSTS

Red-Ray installation at Colonial Piece Dye Works, North Bergen, N. J. serving a 30 foot tenter with Palmer. Production tripled using only two Red-Ray burners.

Advantages of Red-Ray Burners

1. Increases output: Drying speeds increased up to 5 times on existing equipment.
2. Cuts labor costs: Production increased without additional operators.
3. Saves fuel: Due to extremely high efficiency of Infra-Red Rays.
4. Dries material evenly: Continuous construction of Red-Ray equipment insures even heat distribution over full width of cloth. As refractory material cools instantly, machine can be stopped without burning cloth.
5. Improves finish: Better hand. No gas fading.
6. Life of Palmer blankets increased as much as 3 times.

Your inquiries are solicited.

with *INFRA* RED-RAY COMBUSTION EQUIPMENT

on

- ***Dryers***
- ***Tenters***
- ***Palmers***
- ***Singers***
- ***Slashers***
- ***Etc.***

Drying speeds have been increased from two to five times on existing equipment. Not only is it possible to increase drying speeds, but finishes are better and drying is more uniform. . .

RED-RAY MANUFACTURING COMPANY

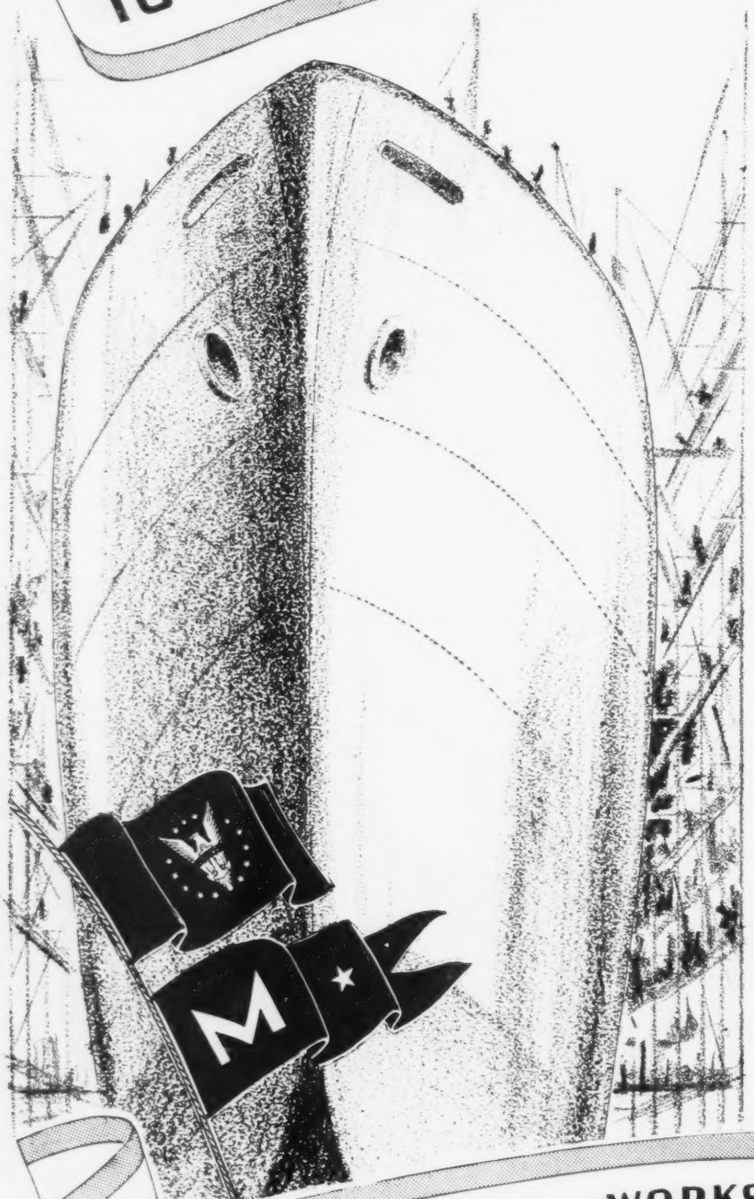
Manufacturers of Infra RED-RAY Combustion Equipment

455 West 45th Street **New York, N. Y**

The WHITIN MACHINE WORKS

Gives its Heartfelt Thanks

TO YOU IN THE TEXTILE *BUSINESS*



You have helped to make it possible for us to do our part in the Victory program of our Country and our Allies by giving up the purchase of new machinery. We are now making vital equipment for the famous

"Liberty Ships"

and numerous other war materials. Whitin engineering, which has always been ahead in design and equipment, is now all out for Victory, but after the war we will be with you again . . . ready, willing and able. In the meantime our repair and replacement departments are working full time and our Textile Research Division is planning Now for Then.

WHITIN MACHINE WORKS, Whitinsville, Mass.

Colors

FOR NAVY UNIFORMS

May we help you solve your dye processing problems?

DYESTUFFS · CHEMICALS · INTERMEDIATES

CIBA

COMPANY, INC.

Greenwich & Morton Sts.

NEW YORK

BOSTON · CHICAGO · MONTREAL · CHARLOTTE
PROVIDENCE · SAN FRANCISCO · PHILADELPHIA

VAT DYES OF THE DOW CHEMICAL COMPANY

"Much has been done, more must be done, for Victory"

from the speech of our President and General Manager
JOHN F. TINSLEY

"WE recognize that the Army-Navy 'E' award to us is a 'pat on the back' to acknowledge, in a solemn way, some things we have done ★ We know that our Country has a greater job to do in the future ★ The encouragement of Uncle Sam's approval of what we have done will help us to do more ★ We propose to see that no looms are idle because of lack of our efforts ★ We propose to see that our other War jobs are delivered to the best of our individual efforts."

Written by

The Employees of CROMPTON & KNOWLES LOOM WORKS

Colors

FOR NAVY UNIFORMS

May we help you solve your dye processing problems?

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Written by

The Employees of CROMPTON & KNOWLES LOOM WORKS

Has pressure for other war production delayed your getting those new Magnesium assignments under way? American Magnesium Corporation's Jobbing Division may be able to help you by taking on part of that work.

Fabricating is the Job Shop's specialty. The men here understand the manufacturing possibilities of Mazlo Magnesium Alloys. They're expert at forming and joining Magnesium assemblies. By setting up this work here on a production-line basis, they solve the very problems that may be bothering you.

Pictured above, you see Magnesium oil tanks for aircraft being assembled in the American Magnesium Job Shop. Mazlo Magnesium products contribute the light weight so necessary in airplane construction. The Jobbing Division has the know-how which speeds this production, so vital to the war effort.

If you have some problem on which this Magnesium fabricating experience will serve as a guide, we'll gladly talk with you about it. Or we'll see if we can fit it into the Job Shop's schedule. Aluminum Company of America *(Sales Agent for Mazlo Magnesium Products)* 1705 Gulf Building, Pittsburgh, Pennsylvania.

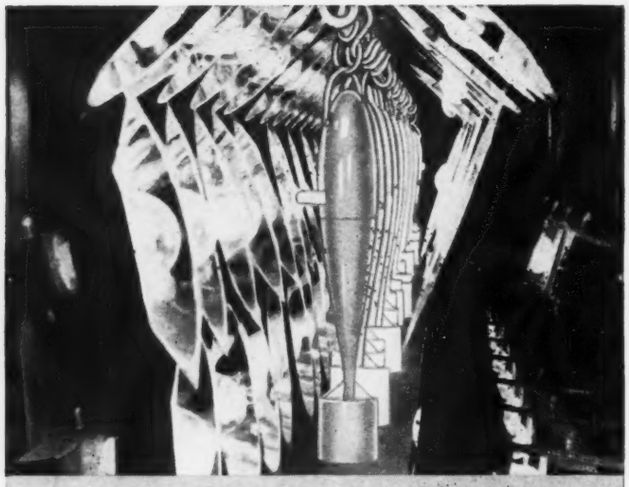
MAGNESIUM MAZLO PRODUCTS

REG. U.S. PAT. OFF.

AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

How to Speed Baking-Drying-Preheating



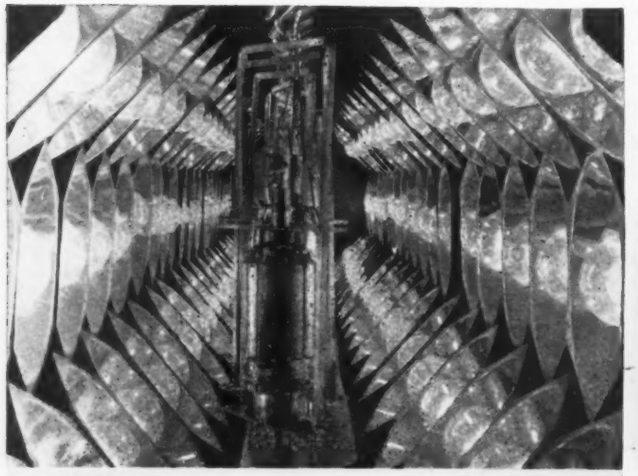
BOMBS—18" high, get their finish baked in 15 minutes by Infra-red compared to 8 hours air-drying time.

On the front lines of war production today, Infra-red is the modern tool that is changing hours to minutes for baking, drying, dehydrating and preheating. The efficiency of this speedy process is amazing. Radiant energy, generated by Infra-red lamps, is directed by reflectors upon objects being processed where it converts into heat. There is no waste heating of air and conduction apparatus—no confining oven equipment—no preheating. Infra-red puts heat right where you want it—instantaneously on and off as required. Its visual operation permits continuous product inspection.

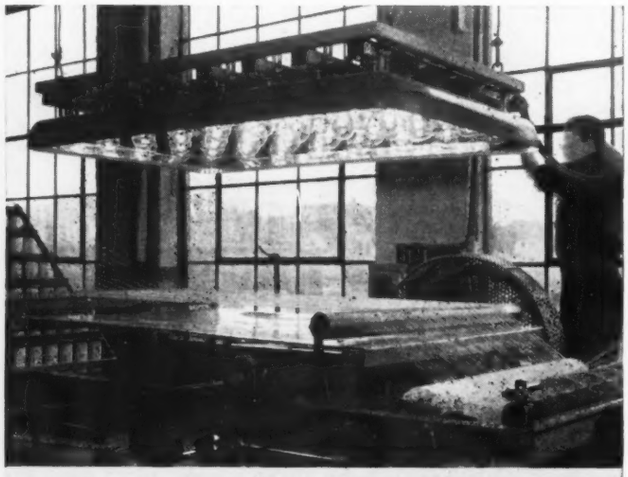
Quickly and easily adapted to "line production," Infra-red not only greatly speeds output. It saves space, saves manpower, reduces equipment investment and has low fuel cost. The hundreds of Fostoria Infra-red equipment installations in war plants, today, is genuine evidence of the vital production advantages this revolutionary process provides.

SOME OF THE WAR MATERIALS NOW BEING PROCESSED BY INFRA-RED

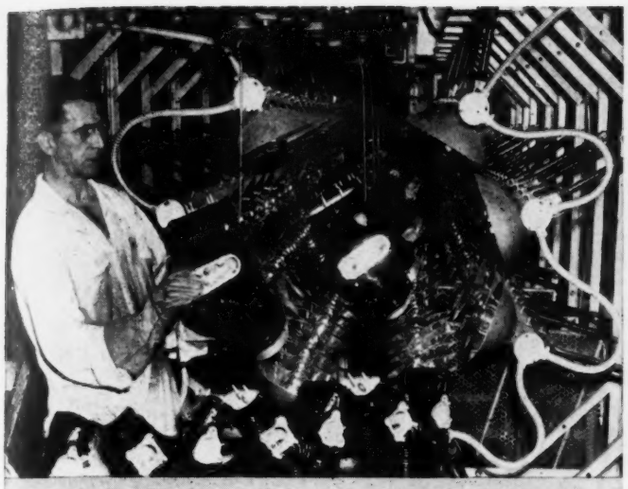
Jeeps—Periscopes—Mine Sweepers—Life Belts—Airplane Engines—Cameras—Expeditionary Cans (Gasoline and Water)—Interior Plane Lights—Gun Barrels—Gas Mask Parts—Refrigerator Units—Airplane Parts—Truck Bodies—Trailer Bodies—Motors—Hardware—Silk Exploder Bags, Textiles, etc.



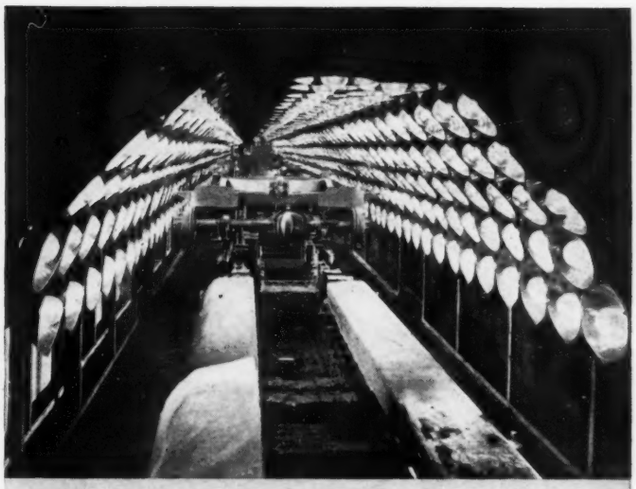
ARMATURES—Insulating varnish on a variety of armature sizes now baked in an average of only 50 minutes by Infra-red.



TEXTILES—400% reduction in drying time for dehydrating thread by utilizing the speed and flexibility of Infra-red.



AIRCRAFT ENGINES—Once it took hours, now it takes 5 minutes to bake compositely, 2 primer coats and 1 finish coat on this aircraft engine.



JEEPS—With amazing speed, Army Jeep chassis, trailer bodies and miscellaneous parts get finish coats baked by conveying through Infra-red tunnels.

-Dehydrating Operations

Quickly available on proper priority, Fostoria Para-sphere equipment and technical service provide the approved means to utilize Infra-red for your production. Baking, drying, preheating or dehydrating, the success of Infra-red is recorded by a wide variety of case studies covering many installations which may apply to your particular problem. Write, wire or phone today for full information. You should by all means investigate the adaptability of the Infra-red process to your operations. The practicability and benefits of converting your present operations to Infra-red will be analyzed gladly without obligation by a capable Fostoria representative.

INFRA-RED fostoria PARA-SPHERE

EQUIPMENT FOR INDUSTRIAL BAKING DRYING - PREHEATING - DEHYDRATING

Request this 32 Page Manual

DESCRIBES FOSTORIA INFRA-RED EQUIPMENT INSTALLATIONS

The many interesting case studies and pictures of Infra-red installations included in this manual will show you the utility and wide usage by industry of Fostoria equipment and the probable advantages to you. Write for a copy now.

FOSTORIA INDUSTRIAL SERVICE STATIONS IN MAJOR CITIES

Equipped to Solve Your Problems

A nearby Fostoria Industrial Service Station is ready to help you determine the benefits of Infra-red for your operations. This means practical testing in a well equipped laboratory and careful calculation for a recommended production equipment installation in your plant. Take advantage of this convenient field service, today. Get the definite facts on how Infra-red will benefit you by calling in a Fostoria Industrial Service Man, now.

THE FOSTORIA PRESSED STEEL CORP.
FOSTORIA, OHIO

"3-6-7? RUSH UP THE RESERVES!"

A good general always has troops in reserve for an emergency. For similar reasons many mills depend on Ashworth for card clothing products.

3 FACTORIES which assure an uninterrupted supply of card clothing. If one factory is temporarily disabled, another factory can "pinch hit" for it.

6 REPAIR SHOPS which facilitate convenient and prompt repairs and which again insure you against emergencies.

7 DISTRIBUTING POINTS which speed up deliveries of those items we have in stock and facilitate personal contacts when the mill has card clothing problems.

★

3-6-7 is also your assurance of dependable quality, for we are "Pioneers in Card Clothing".

★

Ashworth Bros., Inc.

Woolen Division, AMERICAN CARD CLOTHING CO.
Fall River*†‡ Worcester*‡ Philadelphia*†‡ Charlotte†‡
Greenville†‡ Atlanta†‡ Dallas†‡ (Textile Supply Co.)
*Factory †Repair Shop ‡Distributing Point

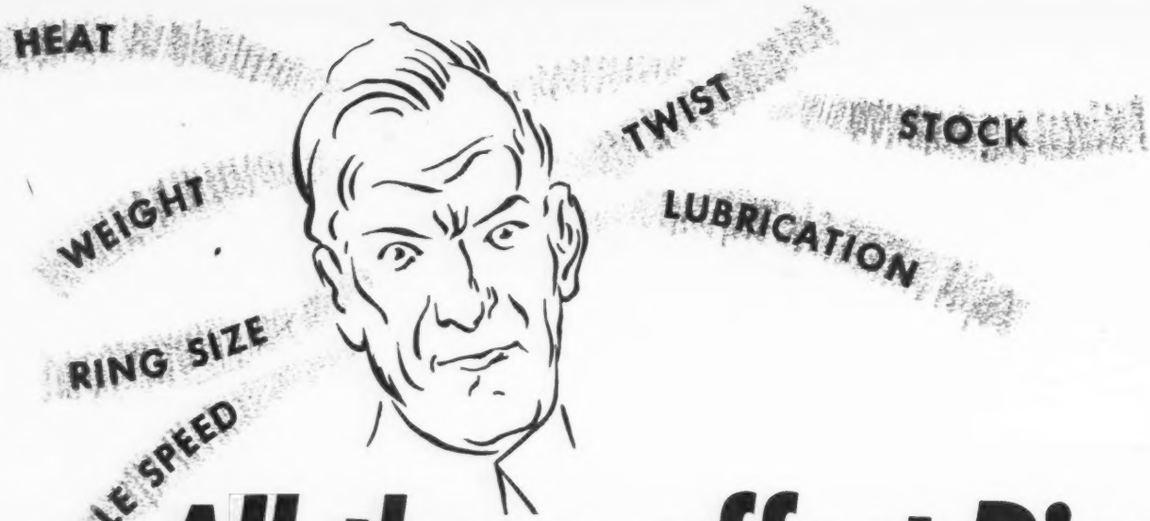
ASHWORTH
PIONEERS IN
CARD CLOTHING

PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for all Types of Napping Machinery • Brusher Clothing and Card Clothing for Special Purposes • Lickerin Wire and Garnet Wire • Sole Distributors for Platt's Metallic Wire • Lickerins and Top Flats Reclothed.

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT

OFFICIAL U. S. ARMY & NAVY PHOTOS

DETROIT PUBLIC LIBRARY



All these affect Ring

All the more reason for a most careful selection of your Ring Travelers!

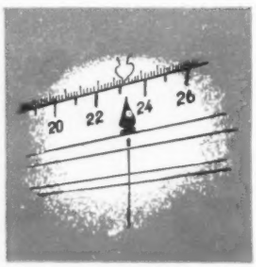
PERFECT BALANCE

Weighs same on both sides. Straight part of shank is in center of gravity. Distributes lubricant and wears evenly. Will not pivot twisting self and rayon.

THE NE-BOW

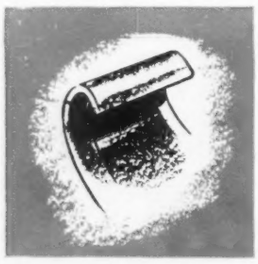
Prevents yarn ends flying out, provides ample headroom for threading —prevents binding on ring. Note "bend inward" at top of horn.

★ *If you want "the same as you've always used" in Ring Travelers — you can get it from "U.S." If you want helpful advice on improved Traveler design or service — "U.S." can give you that, too.*



HEAT CONTROL

for better metal—dominates "U.S." production! Carburizing and tempering ovens are electrically controlled through pyrometers—for better performance.



THE BEVEL EDGE

Great pioneering "U.S." contribution to smooth spinning, twisting. Eliminating angular edges, gives uniformity of tension more even yarn, less "fly."

U.S.

No. 5 OF A SERIES
BASED ON INTERVIEWS WITH TEXTILE MEN who want more production

Sure—we agree with you

Traveler life | and service

Some mill men we've talked to seem to have the general impression that the Ring Traveler is a victim of circumstances. In other words, performance depended on a lot of things over which the Traveler has no control. That's not the way to look at it! Because today it is possible to get a Traveler so designed and so metallurgically correct in its metal composition and weight, and design, that it will be able to deliver the biggest possible production under ALL conditions.

We know the things that affect Ring Travelers. That's why we can make Ring Travelers to give the utmost life and service under all conditions and circumstances. We know the importance of proper design and proper balance when it comes to a question of lubrication. We know how wear on rings causes travelers to wobble and cant and delay the action of the yarn going through them. We know the importance of metallurgical control from the viewpoint of making bronze or steel give better service and last longer, these days, when metals are so important to the war effort.

We know how mill men want Bronze travelers to give longer service, because of the shortage of bronze, and the probable necessity for using a cheaper grade of bronze. We know the vital importance of giving a uniformly good batch of Travelers; that is to say, the correct *number* of Traveler, and the same number of productive hours of service from each and every Traveler in that lot. We know what it means to have yarns break and ends fall down, interrupting production.

If you are completely satisfied with the service you are getting from the Travelers you now use, that's swell! But if you feel that there is a possibility that there could be produced a *different design* of Ring Traveler, more specifically suited to your work — that's where we come in. We have the experience and facilities to produce such Travelers.

All we want is an opportunity for one of our men to come over to your mill and (without taking up your valuable time) let you know whether or not it can be done. Get in touch with us at once.

U. S. RING TRAVELER COMPANY

PROVIDENCE, AMOS M. BOWEN, Pres. and Treas. RHODE ISLAND

Representatives:

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SOLD UNDER THESE TRADE NAMES

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Travelers
Bowen Patented Ne-Bow Vertical
Bowen Patented Vertical Offset

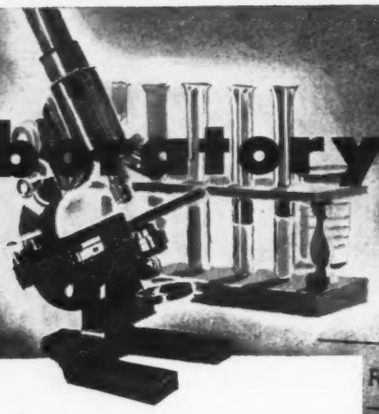
RING TRAVELERS

A Traveler for Every Fibre

THE TRAVELERS THAT KEEP GOING!

U.S. RING TRAVELER CO.

A Laboratory Reports



On the Accuracy and Reproducibility of Fading Tests ...in the

REPORT

RS	FADING EFFECT	DUPLICATION
0	PROGRESSIVE FADING	OK
4	PROGRESSIVE FADING	OK
3	SLIGHT PROG. FADING	OK

National TYPE XV TRADE-MARK *Accelerated* **Fading Unit**

● The laboratory of a large user of textile products exposed samples of cotton and rayon dyeings in the "National" XV unit for periods of 10, 20 and 40 hours. On those samples where progressive fading was expected, the tests showed results equal to or better than any obtained with other methods of test. Where no fading was indicated, no fading occurred in the XV unit. At a later date duplicate samples of the materials were run for periods of time corresponding to those of the original test. *In every case* duplication of results was pronounced very satisfactory by the technicians who analyzed the results.

This is only one of a considerable number of such reports received by us recently. It indicates the success which is being achieved with the XV unit in the accelerated fading of textiles.

ACCURACY AND REPRODUCIBILITY OF FADING TESTS REQUIRE

★ **A Light Source of Uniform High Intensity and Daylight Quality.**

★ **Adjustable Humidity Conditions in the Sample Chamber.**

The light source of the "National" XV unit is the sunshine carbon arc. The radiation from this arc closely approximates natural sunlight in spectral energy distribution. The arc is automatically controlled to vary no more than $\frac{1}{4}$ ampere from the determined current value. Since voltage is fixed, this assures a uniform intensity and quality of radiation.

Humidity in the XV unit is adjustable by means of a thermostatically regulated heater which vaporizes water from a trough below the samples; the humidity is thus maintained at the selected value.

Procurable on priority rating in accordance with regulations in effect at time order is placed.

Write for your copy of bulletin describing this unit.

NATIONAL CARBON COMPANY, INC.

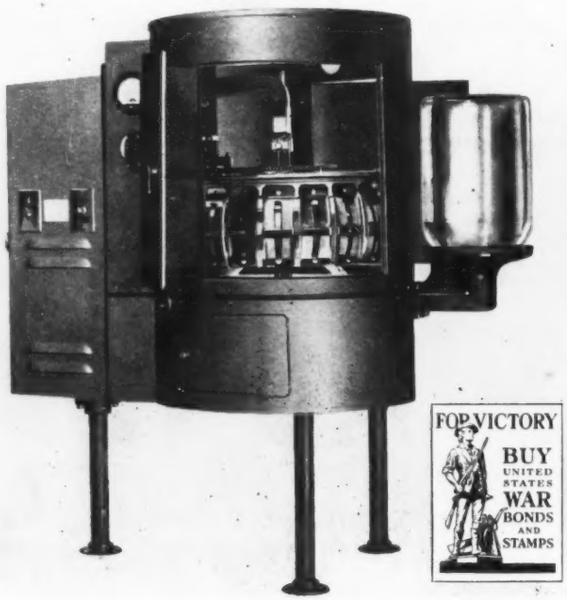
Unit of Union Carbide and Carbon Corporation

UCC

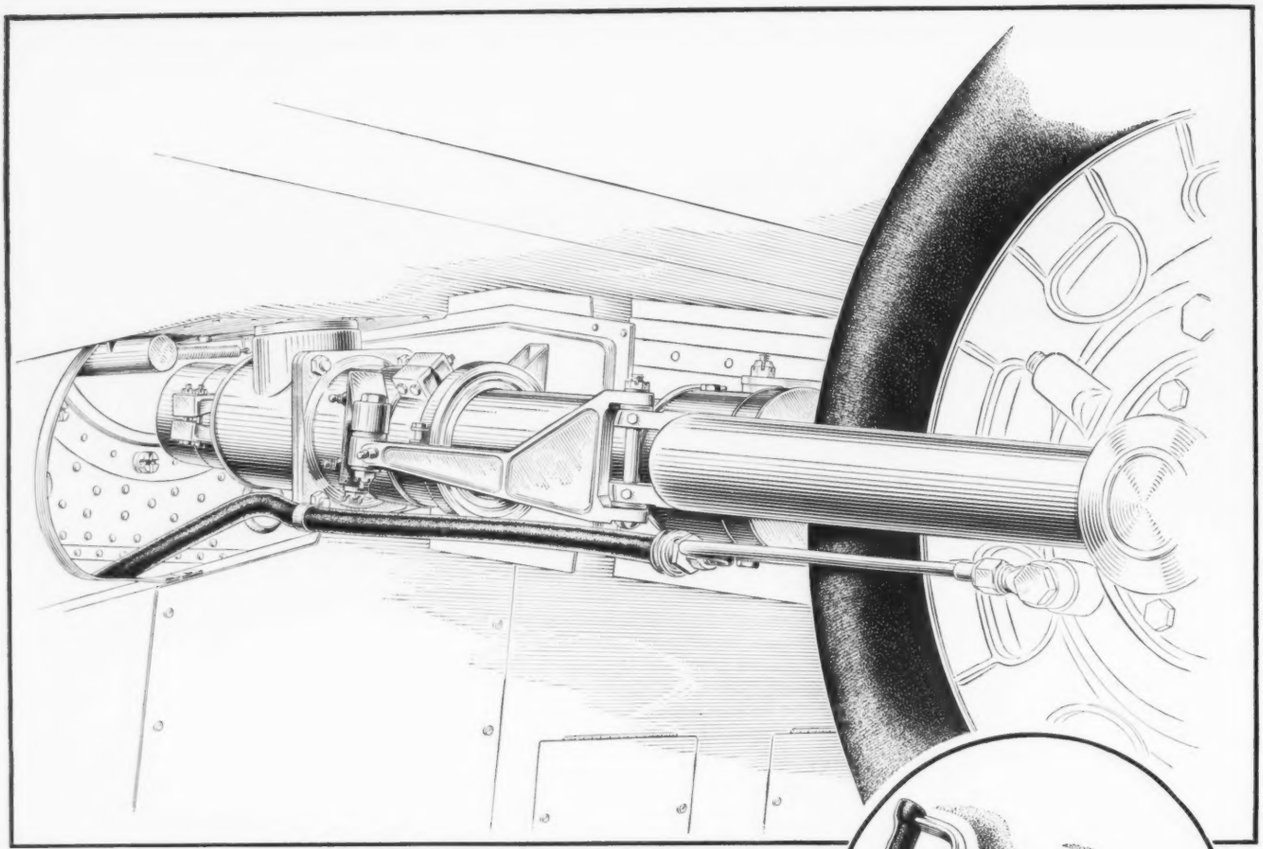
CARBON SALES DIVISION, CLEVELAND, OHIO

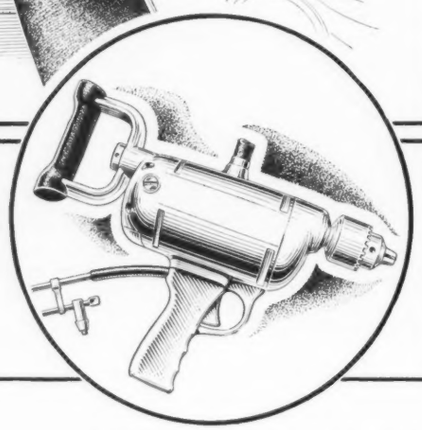
General Offices: 30 East 42nd St., New York, N. Y.

Branch Sales Offices: New York • Pittsburgh • Chicago • St. Louis • San Francisco



Beyond Expectations
COTTON
Out of cotton and lisle the hosiery industry is today creating merchandise that for beauty, style, fit and wear exceeds the most hopeful expectations of the public. It is a triumph of laboratory research and manufacturing genius, achieved in a very short time in spite of formidable difficulties.
Not only did these materials have to be adapted to the limitations of existing machinery but new methods and techniques had to be developed before they could be used so effectively. In knitting, for example, painstaking care and the utmost precision are required to obtain the many new varieties of lace, mesh and other effects. Here is a situation in which the extra smooth finish, fine temper and the over-all uniformity of Torrington *machine-made* Needles mean *protection.*
More and more mills rely upon Torringtons exclusively to maintain the highest standards in knitting.
Torrington
Spring Beard Needles
SINKERS • DIVIDERS
SPLIT DIVIDERS





what the Landing Gear Learned from the Portable Drill

IT'S A LONG WAY from portable tools to fighter planes—but an idea that works in one often proves just as good in the other.

That's the way it was with the Torrington Needle Bearing. Portable tool builders quickly saw how its unusual features could be used to cut excess ounces out of their product designs—where *every* ounce counts in conserving the operator's energy, in increasing his efficiency.

These same weight-saving features also caught the attention of the airplane designers. When they needed a bearing that would give easy operation to retractable landing gears...stand up under the terrific impact when three tons of fighter plane hits the runway... and still meet the rigid weight requirements of fast, maneuverable aircraft, they found just what they wanted in the Needle Bearing's unique combination of low friction coefficient, high load capacity, and small size—plus its ready availability for war applications. That question of size is doubly important when it comes to weight economies. It means light weight in the bearing itself, of course. But much more important is the fact that housings and other parts can also be made smaller and lighter.

ISN'T THERE AN IDEA HERE FOR YOU TOO, as you get your post-war designs under way? This light-weight trend looks increasingly important, with freight-by-air looming up as the coming means of shipment. While you're studying ways to conserve weight in *your* products, see how well the Needle Bearing fits into your problem. You will find the preliminary information you want in Catalog No. 116—and Torrington engineers will help you in adapting the Needle Bearing to specific applications.

THE TORRINGTON COMPANY

Established 1866 • TORRINGTON, CONN., U. S. A.

Makers of Needle and Ball Bearings

New York Boston Philadelphia Detroit
Cleveland Seattle Chicago San Francisco
Los Angeles Toronto London, England

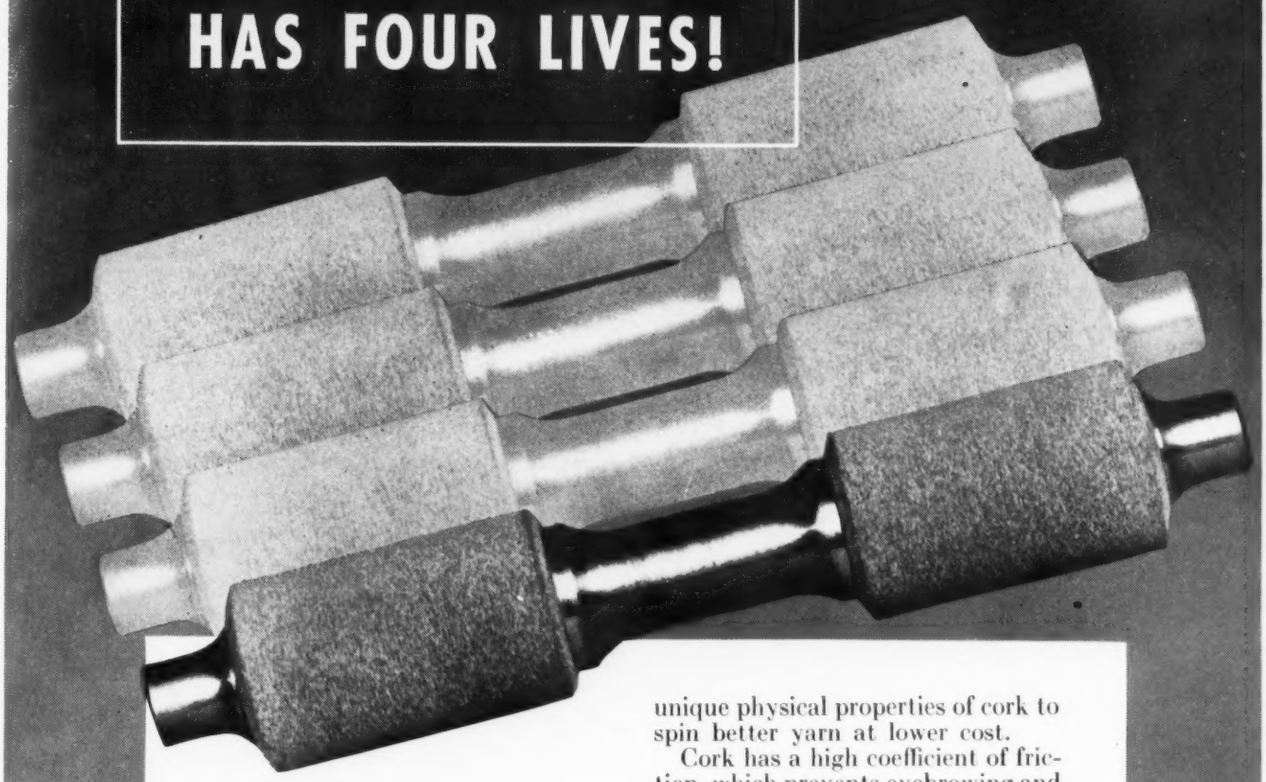
LET'S GO! U.S.A. KEEP 'EM FLYING!

TORRINGTON NEEDLE BEARINGS

KEYED TO TODAY'S NEEDS

AND TOMORROW'S TRENDS

THIS CORK COT HAS FOUR LIVES!



IF you're using Armstrong's Cork Cots, you already know this cork cot that averages four times as much service as leather roll coverings. That's because Armstrong's Cork Cots have a long initial life and, when they do begin to show signs of wear, can be rebuffed . . . made like new . . . for as little as ½¢ per roll. Moreover, each cot can be rebuffed two to four times . . . for a total of three to five full-length service lives!

These cots not only give you *long* service. They give you *dependable* service, for they fully utilize the unique physical properties of cork to spin better yarn at lower cost.

Cork has a high coefficient of friction, which prevents eyebrowing and produces uniform drafting with minimum slippage. Cork's resilience helps it "come back" after being grooved by top roll laps or hard ends. Cork's resistance to lateral flow helps maintain a true drafting surface and assures satisfactory Monday morning start-up.

Combine all these advantages with low first cost, and you realize why *more spindles are equipped with Armstrong's Cork Cots than are equipped with any other roll covering.*

Armstrong Cork Company,
Textile Products Section,
8301 Arch St., Lancaster, Pa.

ARMSTRONG'S CORK COTS

ACCOTEX COTS · ACCOTEX APRONS

Uniform

(2 or 2,000,000)

IN THE REALM of industry, *uniformity* is the prized characteristic—every pencil, every screw, every blade the same as the one that went before, the one that came after.

In probably no industry is uniformity so vital as in textiles. Yarns that vary are hard on weaver, on dyer, on converter, alike. They mean lost hours, lost labor, lost profits. If the renowned "Continuous Process" did nothing more than insure absolute uniformity in the yarn produced, it would be worth its weight in gold—but even more than that, the "Continuous Process" produces a yarn virtually knot-free, in which a broken filament is practically unknown, and in which today's cone of yarn is identical with yesterday's, and will be indistinguishable from tomorrow's.

Only by the "Continuous Process", which spins, washes, bleaches, treats, dries and twists the yarn as a single thread, in one continuous operation, is such a yarn possible. The "Continuous Process" is an exclusive Industrial Rayon development.

"CONTINUOUS PROCESS" Spun-lo Rayon
Reg. U. S. Pat. Off.

INDUSTRIAL RAYON CORPORATION • Cleveland, Ohio—New York Office, 500 Fifth Avenue

EVERY GRAVER WATER CONDITIONING JOB *Starts Here*

THE chemical content of water varies greatly in different localities, as do the purposes for which the water is used. For that reason your water conditioning problems, whatever they are, cannot be properly solved without a careful analysis of your water supply and a thorough study of your processes.

Every installation of Graver Water Conditioning Equipment starts in the Graver laboratories. Graver chemists analyze samples of the water to be treated and Graver engineers make a detailed study of the conditions and requirements. Based on the information thus gained, the equipment is designed and built to meet the specific requirements of the job at hand.

This has been the Graver policy throughout their more than thirty years of designing and building water conditioning equipment of all types. When you specify Graver Water Conditioning Equipment you are assured of a job that is planned, designed, and built to meet your individual needs with the greatest efficiency and economy.

Consult Graver — today.
There's no obligation.

WATER SOFTENERS
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SEWAGE EQUIPMENT
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STEEL STORAGE TANKS
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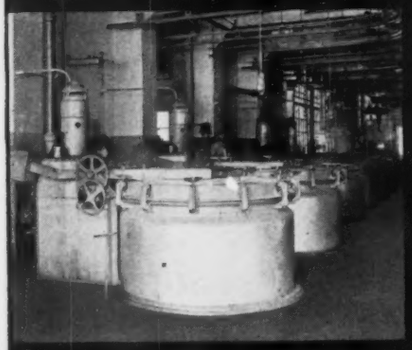
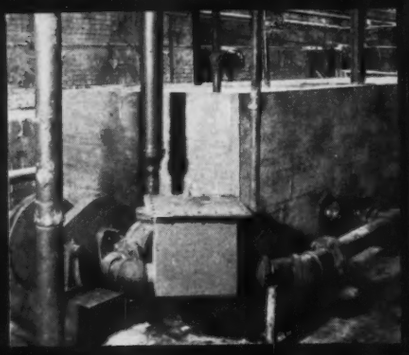
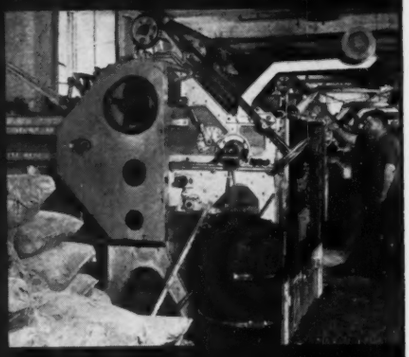
READY FOR PEACE AS WELL AS WAR



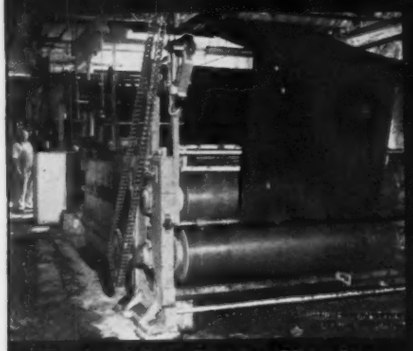
Stock Dye Kettles



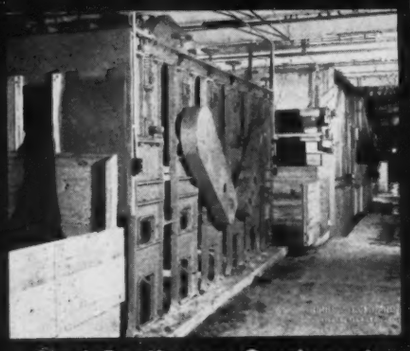
Soap Distributing System



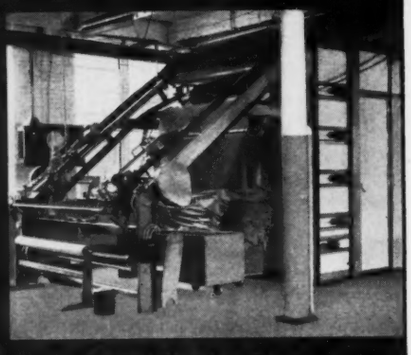
Fulling Mills



Carbonizing Range Showing Acid Tank and Squeeze Rolls



Semi-Continuous Crusher at end of Carbonizing Range



Sweet Tenter Dryer

Recently modernized with Fleet Line Finishing Equipment, this New England mill, noted for quality fabrics, can meet present high production requirements. Equally important, it will be able to meet the low cost requirements of the peace to follow.

Even if you can't get satisfactory deliveries on finishing equipment for today's production, it is none too soon to plan for the future. Let us survey your finishing plant and streamline your production on paper, so we'll both be set to go when war time restrictions are lifted.

Benefits Realized

1. Approximately 30% saving in fuel due to reduced steam consumption.
2. Stock dyeing crew reduced from 27 to 8 men.
3. Carbonizing crew reduced from 8 to 2 men. Production continuous at 300 yds. per hr. on 30 oz. kerseys and at double that rate on 14 oz. fabrics.
4. Fulling production per machine tripled. Labor cut ½. Dead loss reduced and quality improved.
5. Estimated saving in soap of about 15% (soap distributing system recently installed.)
6. Sweet dryer production increased 75%. Labor reduced 35%. Much better drying.

The Fleet Line

OF FINISHING EQUIPMENT

RIGGS & LOMBARD, INC.

FOOT OF SUFFOLK ST., LOWELL, MASS.

AGENTS: Paul A. Merriam, 11 Berwick Lane, Edgewood, R. I.
Harold C. Osler, 6312 Sherwood Road, Philadelphia, Pa.

A bayonet scabbard that might have been a cone of yarn

In a time of peace this bayonet scabbard might have been a cone of yarn running on your loom. It is made of the plastic Tenite which, like Eastman acetate rayon, has its origin in cellulose acetate. In a bayonet scabbard dependability is important, and this one, in use by U. S. troops, is so tough as to be virtually proof against breaking, splintering or distortion. In a yarn, too, dependability is important. And, like Tenite, Eastman acetate rayon starts with cellulose acetate of exceptional purity and uniformity . . . is under scientific control at every stage of its manufacture . . . can be counted upon to do a wide variety of jobs, and do them well.

EASTMAN ACETATE RAYON

A. M. Tenney Associates, Inc. 10 East 40th Street, New York City, sales representatives for the Tennessee Eastman Corporation, Kingsport, Tennessee, subsidiary of the Eastman Kodak Company.

Courtesy of TWA

With the Minimum of Man-Power!

Floor-maintenance methods that otherwise may be effective in conserving man-power —by providing safer floors for workers— may be dissipating the gains through use of equipment requiring an excessively large cleaning crew. *Just one operator is required for the scrubbing, rinsing, and drying operations with a Combination Finnell . . . it's a complete cleaning unit all in one!*

Actually, a *Combination Finnell* and one operator can do the work of a whole crew using separate equipment for rinsing and drying. In addition to the saving of man-power which the *all-in-one* feature of a *Combination Finnell* makes possible, there's the equally important saving in man-hours due to the speed of the machine. The largest size can clean as much as 8,750 sq. ft. of floor an hour! There are several smaller sizes.

For FREE FLOOR SURVEY, consultation, or literature showing the full range of *Finnell Combination Scrubbers*, phone or write nearest *Finnell* branch or Finnell System, Inc., 1901 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

NOPCO helps keep 'em DRY!

NOPCO water repellents are being widely used today in the finishing treatment of military fabrics. Sleeping bags, tents, uniforms, netting for jungle hammocks, webbing of all kinds . . . these are just a few equipment items where water repellent agents are used for weatherproofing and mildewproofing.

Nopco brings long experience in the water repellent field to finishing plants now engaged in war production. If your plant has a finishing problem, Nopco research chemists will be glad to work with you. Write today to the nearest Nopco office for further information without obligation.

BUY WAR BONDS AND STAMPS

There's a Nopco Water Repellent Agent for Every Requirement.

NOPCO ESE — New type waterproofer for use with solvent plus orthophenyl phenol for mildew.

NOPCO ESF — Solvent type water repellent containing orthophenyl phenol for mildew.

NOPCO ESG — Aqueous water soluble type water repellent containing orthophenyl phenol for mildew.

NOPCO ATO — Straight water repellent for use in aqueous solution.

NOPCO 1931-B — Concentrated water repellent to be used in aqueous solution.

NOPCO 1931-C — Water repellent with copper stearate to be used in aqueous solution. Mildewproof.

NOPCO
REG. U.S. PAT. OFF.
"EVOLVED THRU RESEARCH"

Water Repellent Agents . . .

NATIONAL OIL PRODUCTS COMPANY

HARRISON, NEW JERSEY

BOSTON CHICAGO CEDARTOWN, GA. RICHMOND, CAL.

A LIGHTING FIXTURE HAS A BIG RESPONSIBILITY IN A WAR PLANT

Here are the Answers..

to questions that contractors, wholesalers, engineers, chief electricians, maintenance and purchasing departments are asking about Fluorescent Lighting fixtures

1. How can I be sure of getting dependable lighting fixtures?

By specifying fixtures that have been tested and certified for electrical, mechanical and lighting efficiency by independent experts. Certified FLEUR-O-LIER fixtures meet 50 definite standards set up by MAZDA lamp manufacturers to assure dependable performance. They are tested and *Certified* to those standards by Electrical Testing Laboratories, Inc., of New York.

2. Who makes these tested and certified fixtures?

Certified FLEUR-O-LIERS are made by over 40 leading fixture manufacturers. Any fixture manufacturer who complies with the FLEUR-O-LIER requirements may participate in the program.

3. What are some of the points checked by this testing?

Some of the most important specifications checked by Electrical Testing Laboratories are: High power factor, flicker correction, certified ballasts and starters, brightness control, safety, maximum light output, correct heat dissipation and many others.

4. Don't other makes of fixtures have these features?

Perhaps. But you can be sure of them *all* in Certified FLEUR-O-LIERS. And because they are Certified by E.T.L., any further test or check by the user is unnecessary.

5. Do FLEUR-O-LIER fixtures have non-metallic reflectors?

Many FLEUR-O-LIER Manufacturers now make Certified fixtures using non-metallic reflectors, conforming to WPB order L-78 (Amended) and U.S. Bureau of Standards Specifications. FLEUR-O-LIER specifications also cover these units.

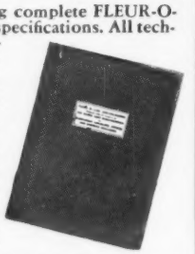
6. How can I tell FLEUR-O-LIERS from other fixtures?

FLEUR-O-LIERS are easily recognizable by the Certification label shown on every fixture. Make sure this label is on the fixtures you specify to assure dependable lighting performance and operation.

7. Are FLEUR-O-LIERS now available—and on what basis?

They are now available on a suitable priority to war plants. Ask your supplier or, for a complete list of manufacturers, write FLEUR-O-LIER Manufacturers, 2120-1 Keith Building, Cleveland, Ohio.

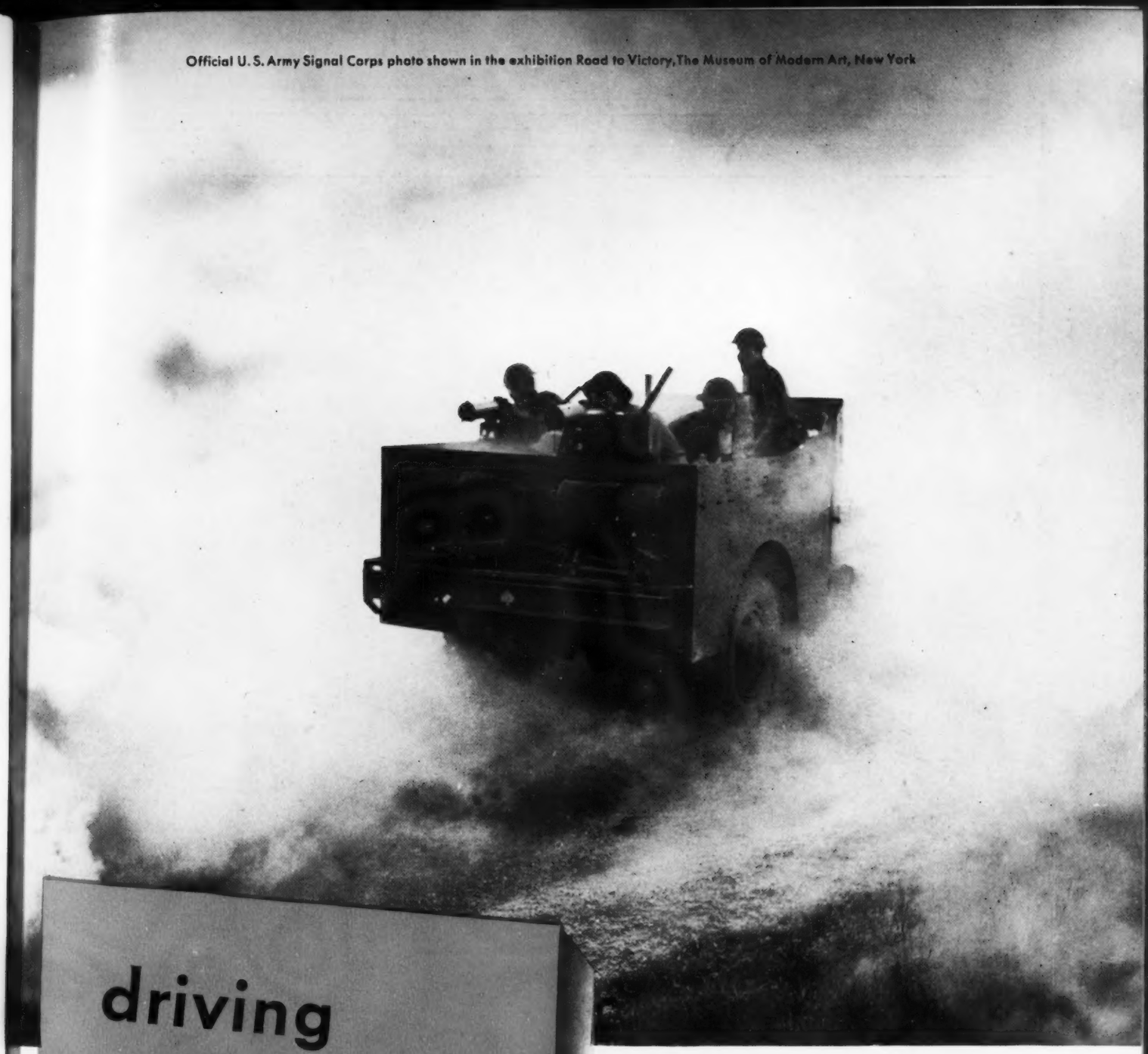
NEW! Booklet giving complete FLEUR-O-LIER manufacturing specifications. All technical information for architects, contractors, wholesalers, engineers and purchasing departments on electrical, mechanical and lighting standards as set up for CERTIFIED FLEUR-O-LIER fixtures. Write NOW to FLEUR-O-LIER Manufacturers, 2120-1 Keith Building, Cleveland, Ohio.



FLEUR-O-LIERS

CERTIFIED FIXTURES FOR FLUORESCENT LIGHTING

Participation in the FLEUR-O-LIER MANUFACTURERS' program is open to any manufacturer who complies with FLEUR-O-LIER requirements



driving through!

The lightning juggernauts of modern war blast through all obstacles....These are tradition-shattering and precedent-making times. This is a dynamic war of actionized ideas; there is no place for casual theories.

Hundreds of tons of General's dyestuffs are being shot to strategic spots...making deadlines on the dot! General is at your command and stands ready to execute your orders!

GENERAL DYESTUFF CORPORATION • NEW YORK CITY

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FACTORS

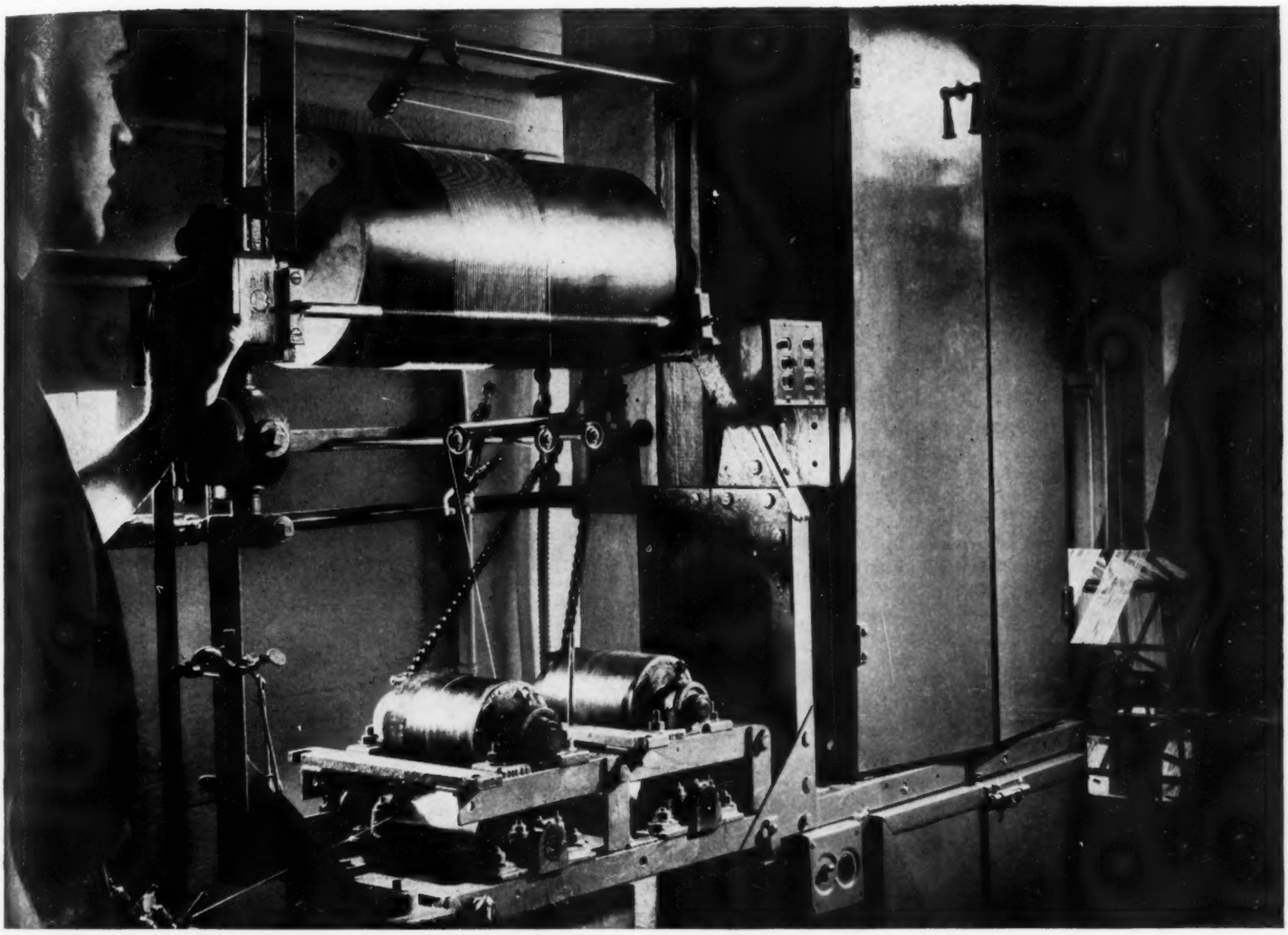
For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

We couldn't buy it—
so we built it!



YARN SLASHER — When it was found that no standard laboratory yarn slasher was available, our laboratory research men devised this ingenious machine which closely approximates textile mill equipment. This machine is used in sizing, coating, impregnating and finishing yarns. Through precise control of time, tension, temperature, and drying rate, mill results are obtained under laboratory conditions. Although the photograph shows the yarn being can dried, the equipment may be converted for use as an air dryer. After treatment and drying, the yarn is automatically wound in skeins on the frames at extreme right.

WHAT IS YOUR PROBLEM? Is it a question of yarn sizing, dye penetration, gray goods desizing, or fabric finishing? Whatever the problem, the Rohm & Haas Sales Service Laboratory is prepared to offer its suggestions.

In this modern and complete textile laboratory there is a specialized piece of equipment for testing and checking every plant operation. If a standard laboratory machine is not on the market, our technicians have designed equipment to accomplish the desired result.

Tell us about your problem and the wheels of this miniature textile plant will begin turning in search of a satisfactory solution.

TRITONS—*Synthetic detergents, emulsifying, wetting, and dispersing agents.*

RHOTEXES—*Synthetic gums for sizing and thickening.*

DEGOMMAS—*Concentrated diastatic and proteolytic enzymes for desizing.*

RHOPLEXES—*Aqueous resin dispersions for finishing and coating fabrics.*

RHONITES—*Modified urea formaldehyde resins for textile finishing.*

PROTOLIN—*Stripping agent for wool stock and piece goods.*

FORMOPON—*Reducing and stripping agent in acid systems.*

LYKOPON—*Reducing and stripping agent in basic systems.*

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA, PA.

Manufacturers of Leather and Textile Specialties and Finishes . . Enzymes . . Crystal-Clear Acrylic Plastics . . Synthetic Insecticides . . Fungicides . . and other Industrial Chemicals

RAYON REPORTS

Published monthly by American Viscose Corporation, New York, N. Y. VOL. 1, NO. 1. JANUARY, 1943

AN IMPORTANT PART of our 4-PLY SERVICE is that of bringing you news of important rayon happenings—new processes, new uses, new textile regulations. Since there are so many noteworthy things happening these days, we are starting a regular news letter in this issue. Future issues will appear regularly.

WAR NOTE—More and more rayon is going to the armed forces . . . in cord for tires for planes and cars . . . in bomb 'chutes . . . in equipment parachutes . . . in bullet-proof gas tanks, electrical insulation, and other vital uses. In addition, rayon is helping Latin American good neighbors to keep their industry going . . . is helping to keep the hosiery industry going in this country as a definite part of the war effort. All this means that there will be less rayon available for civilian consumers . . . and more problems for merchandisers of rayon goods.

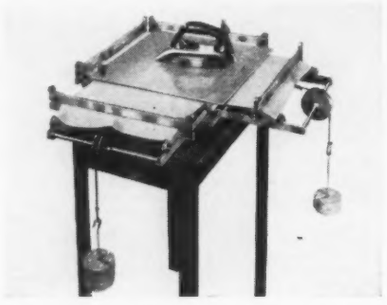
In view of this, we urge you to make the best use of available rayon yarns. Make wearable, durable, serviceable types of fabric. Don't exaggerate your requirements. Order only the amount of yarn or fiber that you will use. And don't hoard yarn. If you have a government contract, and have on hand yarns which you will not use in filling this contract, don't let them lie idle. Give the other fellow a chance to even out his production.

HELP FOR HOSIERY INDUSTRY

There has been an acute need in the hosiery industry for a yarn finish or size which would enable the trade to handle high twist in a single direction when using rayon yarn.

"Avconit," a finish for controlling high twist yarns, which was developed in anticipation of this need, is helping the hosiery industry through a transition period. It is considered by the trade to be about the best finish available for controlling high twist yarns.

Work on "Avconit" types of finish, even though already successful, is being carried forward in further research and experimentation.



NEW MACHINE FOR TESTING DIMENSIONAL RESTORABILITY

We're using a new machine for this important testing now. It was originated by U. S. Testing Company, and we find that it gives a more scientific, accurate prediction than any other test now used. Write us for complete information regarding machine and method.

NEW USES FOR "AVISCO"

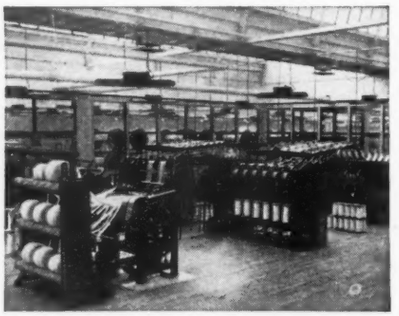
"Avisco" high tenacity rayon staple is now going into a lot of new articles—men's shirts, underwear, pajamas, and neckties; men's and women's handkerchiefs and hosiery; women's dress fabrics and knitted underwear; babies' diapers. And—lint-free spun rayon wiping cloths for high-grade optical instruments used by the Army and Navy.

BETTER FIBER FOR CARPETS AND BLANKETS

A smooth cross-section rayon staple with improved properties—"Tufton"—has been evolved for use in the above field. Field tests have been approved by two manufacturers. We invite others to test this new rayon staple.

RAYON BRISTLES FOR PAINT BRUSHES

Research starting in December, 1941, has resulted in satisfactory bristles now being produced commercially from 150 denier Bright CROWN rayon yarn beamed in the Textile Unit.



TEXTILE UNIT NOW EQUIPPED FOR WOOLEN, WORSTED SPINNING

Our Textile Unit at Marcus Hook, Pa., has just about any kind of textile mill equipment that you can imagine. We have recently added woolen and worsted spinning equipment for experimentation and research devoted to the solution of mill problems. Here's free practical assistance to mill owners and operators. Have you a tough nut to crack? Our technicians would be delighted to try to help solve the problem.

•Reg. U. S. Pat. Off.

Copr. 1943—American Viscose Corp.

4-PLY SERVICE . . .

Fiber research, which helps you get the right yarns; *fabric development*, which helps you design new fabrics; *mill technique*, which helps you solve mill problems; and CROWN Tested, which gives you scientific performance facts on finished fabrics containing CROWN Rayon—are all part of our 4-PLY SERVICE. All are designed to help you make the best possible use of the available yarns and fibers. Make use of the 4-PLY SERVICE!

AMERICAN VISCOSE CORPORATION

Producers of CROWN* *Rayon Yarns and Staple Fibers*

Sales Offices: New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa.

Plants: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

THERE'S NO SHORT CUT TO KNOW-HOW!—

DAYTON DE LUXE PICKERS
PIONEERED, ENGINEERED AND PROVED BY ACTUAL MILL SERVICE

1. Cut Picker costs up to 50%.
2. Greatly increase production.
3. Save operating time.
4. When boxed, loom stays in parallel.
5. Throwing a crooked shuttle is eliminated.
6. Jerked-in fillings reduced to a minimum.
7. Month-after-month service on high-speed looms.

Any grizzled top-kick will tell you there's no short cut to know-how.

During the past few months it has become increasingly clear that synthetics are the only answer to America's critical shortage of natural rubber. And during this time many firms have been feverishly working to short-cut their road to synthetic know-how.

But know-how means learning through years of experience. And there is no short cut to it.

When in 1938, Dayton Synthetic Rubber Textile Products were introduced to set a new standard of durability and performance for an exacting industry, they climaxed Dayton's years of development and pioneering synthetic materials for printer's rollers, tires and industrial V-Belts.

So the current trend to synthetics finds Dayton ready and able to apply its broad peace-time background of technical and manufacturing experience in the development of synthetics to the wartime needs and requirements of America's military and industrial needs.

THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO

HOME PLANT, TEXTILE PRODUCTS DIVISION
WAYNESVILLE, NORTH CAROLINA

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Greenville Textile Supply Co. . . . . Greenville, S. C.
Odell Mill Supply Co. . . . . Greensboro, N. C.
The Textile Mill Supply Co. . . . . Charlotte, N. C.
Industrial Supplies, Inc. . . . . LaGrange, Ga.
Young & Vann . . . . . Birmingham, Ala.
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American Supply Co. . . . . Providence, R. I.
Providence Mill Supply Co. . . . . Providence, R. I.
F. L. Hervey Co. . . . . Fall River, Mass.

EXPORT DIVISION

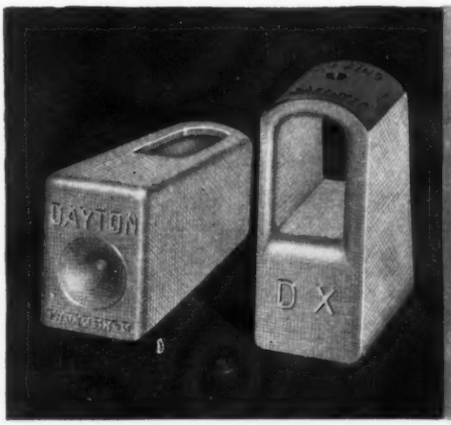
Dayton Rubber Export Corp.
38 Pearl Street, New York, N. Y., U. S. A.

CANADIAN REPRESENTATIVES

Ross Whitehead & Co., Ltd. . . . . Montreal, Quebec

THROW YOUR SCRAP INTO THE FIGHT!

BUY WAR BONDS AND SAVINGS STAMPS



Dayton
***Thorobred* TEXTILE PRODUCTS**
LOOM SUPPLIES—Dayco TEMPERED ROLL COVERINGS
MADE BY THE WORLD'S LARGEST MANUFACTURER OF V-BELTS

Copyright, 1942, The Dayton Rubber Manufacturing Co.

This Simple Idea . . .
is SAVING BELTS
for *Industry*. . . and Rubber for the *Nation*

To see for yourself the belt-saving importance of the CONCAVE SIDE, just pick up *any* V-belt and bend it as it bends when it goes around a pulley.

As the belt bends, grip its sidewalls firmly with your fingers as in the photograph above. You will feel the sides of the belt *change shape*. If the sides were straight before bending, they will *bulge outward* as the belt bends. (See Figure 1 on the right).

Now look at Figure 2. Here you see how bending changes the shape of a belt that is built with the patented Concave Side. The side becomes perfectly *straight*. This belt, when bent, precisely fits its sheave groove. Here are the savings:—(1) There is no side-bulge. This means *uniform* wear—*longer* life—a saving in belts for you, a saving in rubber for the Nation. (2) The full side-width of the belt uniformly *grips* the sheave groove wall—carries heavier loads without slippage—another saving of belts and a saving in power, too!

Only belts built by Gates are built with the Concave Side, a Gates patent.

What Happens When a V-Belt Bends

FIG. 1

FIG. 2

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

Chicago, Ill. 549 West Washington
Dallas, Tex. 2213 Grilfin Street
New York City 215-219 Fourth Avenue
Birmingham, Ala. 405 Liberty National Life Bldg
Los Angeles, Cal. 2240 East Washington Blvd.
Charlotte, N. Carolina 507 Builders' Bldg.
Greenville, S. Carolina 201 Woodside Bldg. Annex
Atlanta, Georgia 738 C. & S. Natl. Bk. Bldg.

Foreign Enemy Attacks—

Paper mills, like nearly every American industry, wage a continuous battle against mold and decay. In paper making processes, large amounts of water are used—water that carries fungi, algae and slime-forming bacteria. Wood pulp in storage is also vulnerable to stain and decay. These enemies are a threat to both quality and quantity of finished materials.

To help win this fight for better products, manufacturers call upon Dowicide industrial germicides and fungicides.

Small quantities of one or more of the 17 Dowicide products are used in various processing operations to inhibit the growth of fungi and bacteria. They are helping to make better paper, leather, paint, lumber, and many other materials.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

New York • St. Louis • Chicago • Houston • San Francisco • Los Angeles • Seattle

IN THE TEXTILE FIELD Dowicide fungicides offer protection against mildew and fungus growths. Incorporated in compositions for finishing, it provides an effective inhibiting action under widely varying atmospheric conditions—from arctic to tropical. This means longer life for army duck and other canvas. Write for full details.

DOWICIDE

GERMICIDES AND FUNGICIDES

DOW

CHEMICALS INDISPENSABLE TO INDUSTRY AND VICTORY

For Waterproofing of all Military Fabrics

LUPOSEC P.Q.D.

A water repellent finish meeting quartermaster specifications for waterproofing military fabrics.

LUPOSEC C.U.

A waterproofing compound incorporating copper as a mildewproofing agent.

LUPOSEC I.N.

A solvent soluble waterproofing product prepared especially to meet specifications for processing army duck.

WOLF BRAND PRODUCTS

JACQUES WOLF & CO.

Chemicals PASSAIC, N. J.

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn., Knoxville, Tenn., Charlotte, N. C., Milwaukee, Wisc., Columbus, Ga.

UNIFORMLY GOOD SERVICE

Ashore or at sea, afoot or aloft, well-spun and well-finished yarn of uniform and high quality makes for better service and more comfort in socks, underwear and other cotton goods. • Good fabric begins with good yarn. • Attention to uniformity and quality is traditional with STANDARD in war or in peace. Now, this policy—practiced since the founding of the Company, 66 years ago—is backed up with the same bond-buying, civilian defense, health promotion and accident prevention programs which are helping the working fronts to back up those on the fighting fronts.

STANDARD DURENE • SELO • PREEMO • COMBED SAKS • THREADS • COMBED PEELERS •

STANDARD-COOSA-THATCHER CO.

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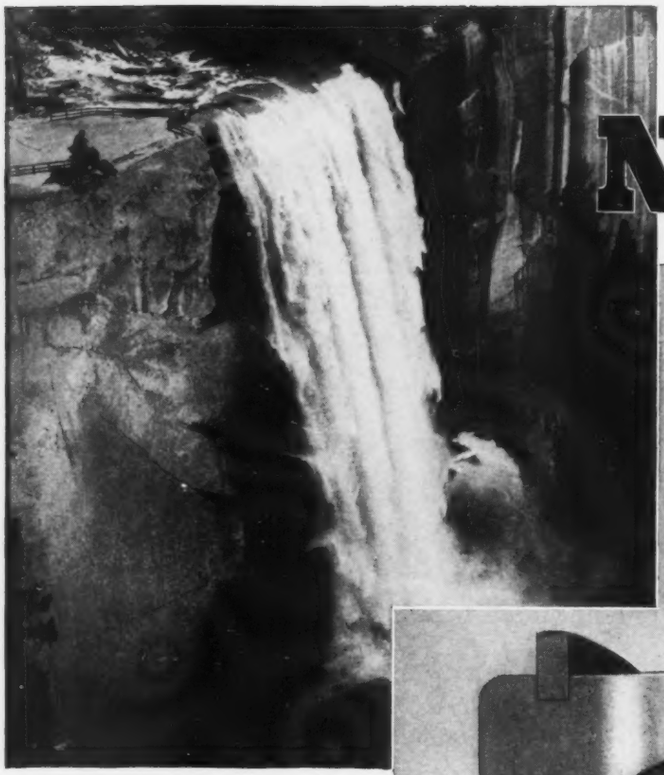
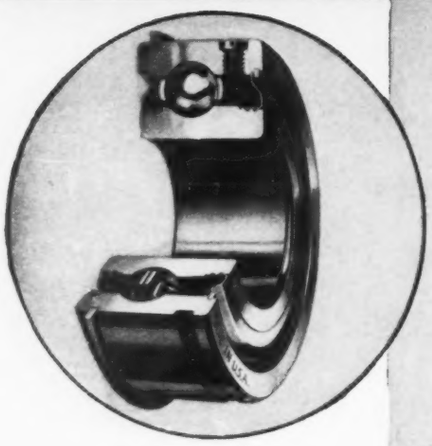
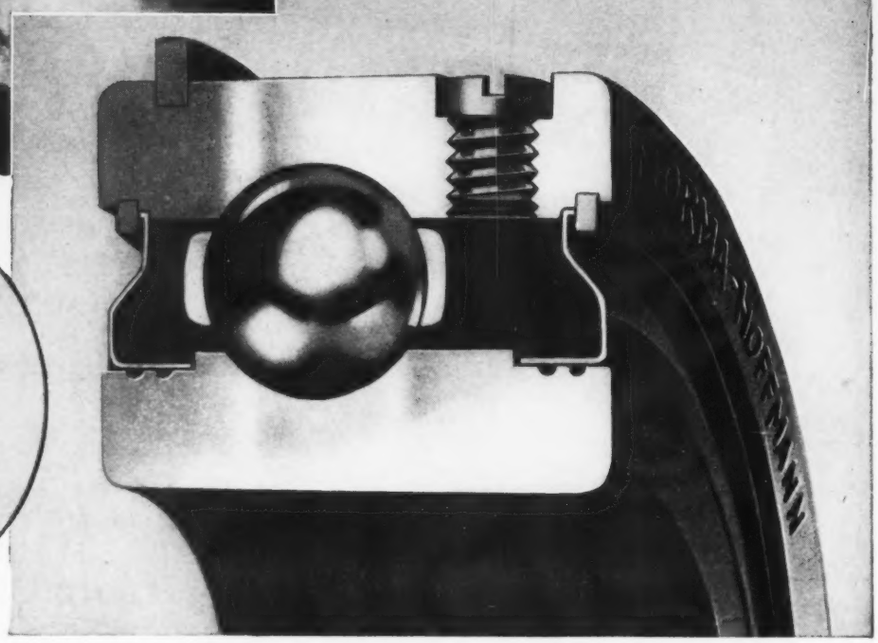
This Garment Made Of
Durene
(2 Ply Mercerized Combed Cotton)
Absorbs and evaporates perspiration twice as fast as garments made of ordinary cotton yarn*... EXTRA comfort, health protection and cleanliness.
*Tests by U.S. Testing Co.



NO *Fear of* GOING DRY!





What water means to the earth, lubricant means to a bearing — life itself. And as the mountain stream provides an abundant and constant flow of water, so the exceedingly large grease capacity of the "CARTRIDGE" BALL BEARING provides constant and abundant lubrication to its raceways and rotating elements.

In the cross-section herewith, note how the DOUBLE-ROW WIDTH GIVES THE "CARTRIDGE" BEARING DOUBLE THE GREASE CAPACITY of the single-row type — guarding against premature dryness. Note also how the in-built metal seals confine the grease WITHIN THE BEARING ITSELF, REGARDLESS OF THE ANGLE OF THE SHAFT.

The "CARTRIDGE" BALL BEARING is equipped with close-fitting, wearless metal shields which, with recessed inner ring construction and two or more grease grooves, form a truly effective labyrinth through which THE GREASE CANNOT PASS AND DIRT CANNOT ENTER.

Adopt the "CARTRIDGE BALL BEARING as your insurance against neglected lubrication, and dirt and grease contamination. It is handled as an integrally sealed unit, needing no supplementary closure parts. It provides easier and quicker assembly and disassembly. It STAYS CLEAN before mounting, during assembly, or when removed, and has convenient regreasing and inspection features.

Write for the Catalog. Let our engineers work with you.

NORMA-HOFFMANN BEARINGS CORP'N., STAMFORD, CONN., U.S.A. • FOUNDED 1911

PRECISION BALL, ROLLER and THRUST BEARINGS

Thrice Honored for PRODUCTION

ADDRESS REPLY TO
THE SECRETARY OF THE NAVY
AND REFER TO INITIALS
AND No.

NAVY DEPARTMENT
WASHINGTON
Navy Board for Production Awards
2118 Massachusetts Ave., N.W. NBPA-437

November 3, 1942

Dear Mr. Janssen:

I am glad to advise you that after careful consideration at its last meeting, the Navy Board for Production Awards granted a renewal of the Army-Navy "E" Award to the Textile Machine Works for an additional period of six months dating from July 25, 1942.

This renewal grants you the right to add an additional white star to your pennant. I am therefore forwarding to you through the Commandant of the Fourth Naval District a new pennant with two stars affixed.

On behalf of the Under Secretary of the Navy, I congratulate each and every one of the employees of the Textile Machine Works upon their continued splendid achievement in outstanding production. This award is difficult to win in the first instance and the requirements for renewal are equally exacting. By winning this additional honor you all have demonstrated a solid determination to supply our fighting forces with the materials they must have to bring this war to a successful conclusion.

Sincerely,

H. A. Wiley

H. A. WILEY
Admiral, USN (Ret.)
Chairman, Navy Board for Production Awards

Mr. Henry Janssen, President
Textile Machine Works
Reading, Pennsylvania

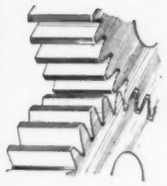
The War Flags of TMW include: Army-Navy "E" awarded November 3, 1942; All-Navy "E" burgee awarded May 18, 1942; Navy "E" Pennant awarded July 25, 1941.

TEXTILE MACHINE WORKS • READING, PA.

Fiesta . . . Every woman knows that the glamour and gaiety of her stockings is in the beauty of the fabric. Every hosiery manufacturer knows that—regardless of the fibre used—it takes good needles to knit a perfect fabric. Keep your knitting machines young and effective with TMW Needles . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.

SPEEDS WAR PRODUCTION EVERYWHERE



MACHINE PARTS ARE HARD TO GET

You can help make the machinery you now operate last much longer without trouble, delay and expense of repairs and replacements, by using Lubriplate lubricants.

Reports from industry everywhere are telling how Lubriplate lubricants are helping to prevent shut downs and repairs. Some of these stories are almost beyond belief.

Everyone engaged in war production owes it to his Government . . . owes it to himself . . . to see what Lubriplate lubricants will do to increase his production. Lubriplate is different. It is not to be compared with ordinary oils and greases. Lubriplate arrests progressive wear. It protects machine parts against rust and corrosion. It maintains a wear-resisting protective film on bearing surfaces. There are Lubriplate lubricants to meet all operating requirements, high and low temperatures, and in the presence of water and steam. Even under certain chemical conditions Lubriplate is performing in a manner that would be impossible with most conventional lubricants. Lubriplate outlasts ordinary lubricants many times, therefore it is extremely economical.

ON GUARD

AGAINST FRICTION

In these war days when production is vital and machine replacement parts are hard, or, impossible to get, Lubriplate lubricants will materially help keep machines running efficiently and at reduced power consumption. Write today for copy of "The Lubriplate Film" containing much valuable information.

LUBRIPLATE DIVISION

FISKE BROTHERS REFINING COMPANY

NEWARK, N. J. **SINCE 1870** TOLEDO, O.

WRITE FOR THE NAME OF THE DEALER NEAR YOU

WHITIN *KEEPS 'EM ROLLING —ON SKF BEARINGS*

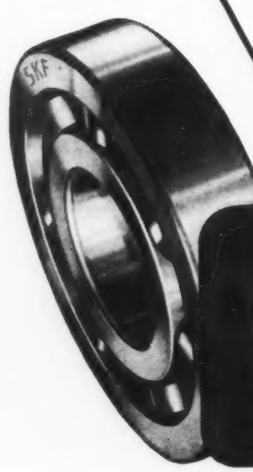
● *Built by* Whitin Machine Works

Inside many woolen and worsted mills engaged in manufacturing fabrics for the armed forces, you'll find this Whitin-Schweiter Automatic Filling Bobbin Winder. And inside each spindle unit, you'll find nine SKF's taking radial and thrust loads in varying combinations . . . insuring accuracy . . . holding in perfect alignment the spindle head, main driveshaft, bobbin holder, oscillating shaft, feeler wheel and the main driveshaft arm. Where increased production is vital to the War Effort, SKF's are always a part of the job. 5196

SKF INDUSTRIES, INC., PHILA., PA.

Tips
ON BEARING CARE
To make present equipment last longer

1. Use clean lubricant recommended by the manufacturer of this machine.
2. Avoid loads and speeds beyond those recommended by the manufacturer.
3. If necessary to remove bearings, keep them properly lubricated. Avoid the intrusion of water and dirt. Apply pressure on the inner race only. Don't hammer outer race.



SKF
BALL AND ROLLER BEARINGS

How Gulf Lubrication Service Engineers are giving effective help to improve production

Increased production . . . "Since we installed the lubrication practice recommended by a Gulf Lubrication Service Engineer, production has increased in every mill department," says a woolen mill Superintendent. "We are now able to operate equipment at most efficient speeds, and to avoid shutdowns except for periodic inspection."

Increased production . . . "We have had complete freedom from oil stains and have secured better performance from our equipment since we adopted Gulf Engineering recommendations," says a mill Superintendent. "As a result, we have increased production and lowered our operating costs."

Increased production . . . "The quality lubricants recommended by a Gulf Lubrication Service Engineer are doing a real job for us," says an Overseer of Weaving. "Month after month our cost and production records tell a story of the benefits of better loom lubrication—improved quantity and quality of production, and lower maintenance expense.

Seconds reduced 50% . . . "The quality greases recommended by a Gulf Lubrication Service Engineer are an important factor in the all-around better performance of our Dobby looms, which has resulted in a 50% reduction in seconds," says a Superintendent of Weaving.

Warper stops reduced . . . "Our warper stop record shows a big improvement since we adopted the recommendations of a Gulf Lubrication Service Engineer," says an Overseer of Spinning.

Lower repair costs . . . "I have tangible evidence of better lubrication since we adopted the recommendations of a Gulf Lubrication Service Engineer," says an Overseer of Weaving. "First, our loom parts bill is way down; and second, we haven't had a loom fire in months, for the Gulf grease on the cams stays right where it belongs."

GULF OIL CORPORATION · GULF REFINING COMPANY · PITTSBURGH, PA.

Call in a Gulf Lubrication Service Engineer to help improve your production

GULF INDUSTRIAL LUBRICATION

THE CHEMICAL COMPOUND THAT OUTDID

Rip Van Winkle

• Commercially, *sodium chlorite* was asleep for 100 years. It was not until 1941 that it came into its own – when it was first produced in commercial quantities at Mathieson's new chlorite plant at Niagara Falls. Fourteen years of intensive research and practical experimentation by the Mathieson technical staff had preceded the actual construction and operation of the plant.

Long known to chemists by the formula $NaClO_2$, sodium chlorite has unusual oxidizing powers which make it an invaluable bleaching and processing agent. Today sodium chlorite is widely used in the paper and textile industries. It has successfully demonstrated its ability to bleach paper pulp and textiles to high whites without loss in tensile strength – a result that no other known processing agent has been able to achieve. Non-hygroscopic and readily soluble in water. sodium chlorite is highly stable both in solution and in solid form . . . can be heated to 150 degrees C. without decomposition.

Every day this exclusive Mathieson product is finding new applications in American industry – at a time when progress and production are as vital to victory as all-out offensives on the fighting fronts.

DO YOU KNOW THESE FOUR SODIUM CHLORITE PRODUCTS?

- *Textone* for textiles
- *C2* for paper pulp processing
- *Sodium Chlorite Technical* for general commercial oxidation and processing
- And, of course, the *pure analytical grade* used as a laboratory reagent

Mathieson CHEMICALS

THE MATHIESON ALKALI WORKS (INC.)
60 EAST 42ND STREET, NEW YORK, N. Y.

LIQUID CHLORINE . . . SODA ASH . . . CAUSTIC SODA . . . BICARBONATE OF SODA . . . BLEACHING POWDER . . . HTH PRODUCTS . . . AMMONIA, ANHYDROUS and AQUA . . . FUSED ALKALI PRODUCTS . . . SYNTHETIC SALT CAKE . . . DRY ICE . . . CARBONIC GAS . . . SODIUM CHLORITE PRODUCTS

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Textile World

JANUARY, 1943 • VOLUME 93 • NUMBER 1

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THE ANNUAL ISSUE of TEXTILE WORLD will be a Four-in-One Issue, comprising the following main divisions: Annual Review and Forecast Section, Textile War Manual, Employee's Handbook, and Regular February Issue. The Forecast Section will include general outlook for the industry, machinery sales survey, progress and outlook in manufacturing and processing technique. The War Manual will include summary of specifications of goods bought by various branches of the Government, and "Manual of Military Fabrics—Part 1," discussing in detail manufacture and finishing of an important military fabric. Third section will present a typical employee's handbook to serve as a guide to textile mills desiring to issue such a handbook to their own workers as an aid to better employer-employee relations. And of course the regular February Issue will contain up-to-the-minute technical articles and news coverage.

AND IN JUNE, 1943—TEXTILE WORLD's 75TH ANNIVERSARY NUMBER

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FOR THE TEXTILE INDUSTRY

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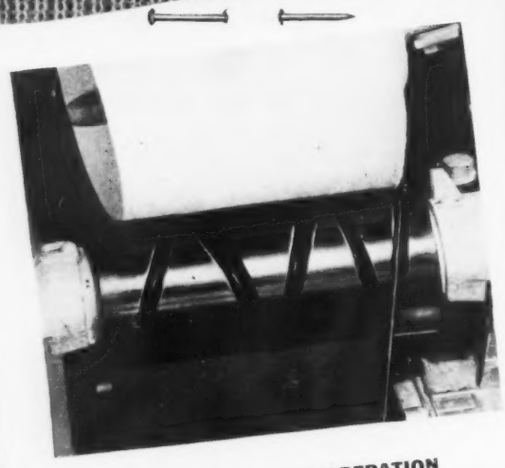

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Power—Giant Arm of Production

Ninety Per Cent of American Industry Is Electrified

ELECTRICITY is the mainspring that turns the wheels of our factories, mills and mines. It is the tireless arm that grinds our grain, weaves our cloth, pumps our water, builds our planes, our guns, our ships, our cars, our trucks and tanks . . .

The mighty Pharaohs had less energy at their disposal in building their pyramids than is generated today by one single power plant. The combined capacity of America's central power systems is without parallel in the history of the world . . . 46 million kilowatts, i.e., 65 million horsepower in steam turbines, hydro turbines and other prime movers. That is more power, day in and day out, than 650 million slaves could produce—for a limited time—minutes in fact.

The capacity of this vast fountain of energy is beyond the grasp of the average man who flips a switch and sets in motion machines that perform the labor of a thousand man-hours in a matter of minutes. Perhaps only the old time farmer, whose traditional source of power is a team of tired horses and a pair of calloused hands, knows how to appreciate this commodity that is so vital an ingredient of everything we consume and use.

Yes, we take electricity for granted. We expect it to appear in unlimited quantities, like water and air, as we need it. Almost as essential as these two elements in times of peace, it becomes a matter of life and death in times of war. Industry would collapse without it and the nation would quickly perish.

With the catastrophe of Pearl Harbor a little over a year ago, came the realization that we had to out-produce our enemies. To out-produce our enemies, who had a seven year head start, meant to turn more wheels than they were turning and to turn them faster than they were turning them.

New plants sprung up overnight. Production increased beyond our wildest dreams. Aircraft and shipbuilding surpassed the most daring forecasts. The machine tool industry's output grew to a volume that bordered on the miraculous. Guns, shells, uniforms, shoes, tanks and a thousand other items were being made in hitherto undreamed of quantities. All of them have one common essential ingredient – power. Industry demanded power – more and more power!

It is no small tribute to the power industry that, while other raw materials developed shortages necessitating strict priorities control, electricity remains unrationed – no priorities, no curtailments, no rate increase. Current industrial consumption is running 16 per cent over 1941 and 50 per cent over 1940. Not spectacular perhaps but when we consider that the nation's 26 million domestic consumers utilize only about 14 per cent of the energy output, we begin to get some idea of industry's power consumption.

Our power companies might have been stunned by the prospect of mounting demands for kilowatts. Instead they set about developing and coordinating a multiplicity of relatively small and seemingly unrelated factors. Individually or even collectively, these have not been of a spectacular nature. Certainly they have not inspired the award of the Army-Navy E although they are an essential ingredient in every Army-Navy E that has been awarded to American industry.

The contribution of the power industry to the winning of the war is not likely to flame forth in newspaper headlines. It takes the more prosaic turn of portraying an industry that is doing wonders quietly, unobtrusively.

At the close of the last war the power at the disposal of the American industrial worker averaged 3⅓ horsepower. At the beginning of this war, twenty years later,

This is the seventh of a series of editorials appearing monthly in all McGraw-Hill publications, reaching more than one and one-half million readers, and in daily newspapers in New York, Chicago and Washington, D. C. They are dedicated to the purpose of telling the part that each industry is playing in the war effort and of informing the public on the magnificent war-production accomplishments of America's industries.

it had increased to 6½ horsepower. What other nation can even approach that figure? This large provision of power is the achievement of the electric utility industry. For years it had built and applied its equipment to the highest standards of performance and operated its systems to equally high standards of service and dependability. Always recognizing that "public service is a public trust" it had maintained wide margins of security in performance. Today these margins are the source of the power industry's ability to rise to the emergency.

In short, the electric utilities were prepared!

Power men are accustomed to looking ahead, to prepare for growing loads and allow for unforeseen contingencies, for electricity cannot be stored. It is "ordered" by touching a switch. It is delivered and consumed at the same moment.

Months before the actual outbreak of hostilities foresighted power men set to work computing how much life of equipment could be risked in the process of crowding it toward greater output. Generators, boilers, turbines, cables, transformers and even conductors underwent close scrutiny in an effort to increase the load – *safely*. They figured, they experimented, they tried untried measures.

Insulation, for example, is the crux – the least known component of electrical apparatus. When it lets go the service suffers. It is not easy to know how near any bit of crucial insulation is to letting go. It takes courage to work it to a point just short of failure . . . but that is exactly what is being done today.

Technological forcing of equipment, however, is not all of the story. Obsolescent equipment has been rehabilitated; salvage has been intensified; critical metals have been replaced by non-critical materials; water sprays, air-blowers and other cooling methods have been installed to keep over-loaded apparatus from over-heating. Nothing has been overlooked. Ingenuity has contrived the well nigh impossible.

Hand in hand with these measures of expediency have gone measures of intensification. Hydrogen pressure for cooling generators has been stepped up from ounces to pounds taking more heat away from the machines and enabling them to carry greater loads. Capacitors – little more than aluminum foil interleaved with thin paper – have been applied by the carload relieving the systems of that mysterious reactive current which is associated with that equally mysterious power factor. They have performed wonders in avoiding the need for additional generating and transforming equipment. The use of portable sub-stations has averted the otherwise necessary reserve capacity in fixed installations at many points.

When coal was placed on the urgent list last spring the electric utilities outstripped all other industries in providing storage for the winter. Stocks on hand the first of October were sufficient for 105 days, or more than twice what would be considered adequate in times of peace.

When staff losses to the armed forces became serious power companies contrived measures that enable them to get along without aggravating the national manpower situation by hiring others to replace them. Today meters are being read every two or three months instead of monthly; women are being trained to do drafting, keep the logs in power plants and sub-stations and to test meters in shops and laboratories.

On the summit of "Grandpa's Knob", a mountain overlooking Rutland, Vermont, stands a giant windmill that would have been the delight of Don Quixote. Towering 200 feet above the tree tops its mighty 175 foot propeller turns with the wind and drives a 1,000 kilowatt generator which feeds its output into the Central Vermont Public Service Corporation's power system. The most ambitious wind-turbine generator in the world, and a daring experiment of forward-looking men.

Today everything electrical is being tried; is being worked harder than it has ever been worked before.

Great credit is due the men behind the electric power industry. These men have recognized the responsibility of their jobs – it is a part of their very being. Theirs is the kind of service that *must* be maintained. No soldier is truer to his trust than is the employee of this great industry.

The service must go on! No matter what happens – acts of God or deeds of men – the service must go on! Labor disturbances may disrupt other industries but there have been no shutdowns due to labor trouble in electric power plants since Pearl Harbor.

And this winter when blizzards pile up drifts and sleet makes pavements slippery there may be absenteeism from other plants but the utility employees will be on the job ready to climb the ice-covered poles and repair the ice-laden lines whenever the call comes.

In this war the least costly yet the most precious element of production – electricity – will be ever ready to "man" the machines that will produce the weapons that will give victory to the forces of freedom.

President, McGraw-Hill Publishing Company, Inc.

Textile World

DOUGLAS G. WOOLF, EDITOR

It's Going to Be Tough

THERE'S NO SENSE trying to kid any textile manufacture about the outlook for 1943. It's going to be tough. It's going to be much tougher than 1942.

Last year, the main job was a production one—and the textile industry came through with a swell performance—as the Quartermaster General has testified repeatedly.

This year, that job must be continued and improved, but in addition the industry faces a set of problems which threaten the solvency of its economy. It is necessary to tackle the job of trying to safeguard the livelihood of hundreds of thousands of employees simultaneously with the job of clothing our armed forces. And it's not going to be easy to do this; the full impact of the war upon our economy will be felt in 1943.

IN THE MIDST of unprecedented purchasing power, it is difficult to project in its proper perspective the financial problem ahead. But to many textile businesses, that problem is already at hand. Companies producing non-essentials, and even many producing more or less essential civilian goods, have been caught in the shortages of material, manpower, and machinery. Many more will be added to this casualty list in the 12 months of 1943.

Even to mills largely on war work, there are potential troubles ahead; take the case of the worsted mills as an example. Also, the war-products group faces the prospect of renegotiation, with its unknowns. And of course both war and civilian groups face a tax burden about which there is only one certainty: it will become progressively heavier. There is also the probability that new tax legislation will be delayed.

How to provide a cushion against these financial impacts is a hard question. It is practically impossible to set up any scientific system of reserves which will take care of a future with so many variables. All one can do is his best—and that must be a lot better than most companies are doing now. The sooner they overhaul their financial plans, and prepare for the rainy day, the better.

MANPOWER is another tough problem ahead. The principal phase of this problem with which textile manufacturers will have to contend to an increasing degree is labor turnover. And, as any mill-man knows, that is one of the worst enemies of productive efficiency.

To offset its effects, manufacturers must start now to concentrate far more of their attention upon training and personnel policies than ever before. Some few are doing a real job; the majority have it still to do. Labor turnover can not be stopped, but it can be reduced by sound personnel policies and methods.

Similarly, the problem of machinery deterioration, due to present unprecedented production schedules, and without the prospect of replacement—in fact with the prospect of an inadequate supply of repair parts—can be partially offset by tightening up the mill's maintenance program all along the line, by re-arrangement of machines and processes, and by soliciting the advice of supplying companies.

THIS THREE-FOLD PROBLEM of money, manpower and machinery is enough to make any textile man shiver a bit as he gazes ahead into 1943.

But the thought that will warm him down to the cockles of his heart, and will make these three nightmares seem as nought, is the realization that 1943 will also probably bring with it a far clearer indication of happier times ahead for the world. This year 1943 will probably be the year of destiny, because during it the prospect of complete Allied victory should take definite shape as to time and form.

Yes, it's going to be tough. But it's going to be thrilling!

Douglas G. Woolf

THE EDITOR SAYS

The People Want More But Better Rationing

The people would welcome a tough-guy policy of rationing. We say this, despite the belly-aching that has been going on about rationing to date. It is our opinion that the kicks have not been about the fact that certain commodities have been rationed, but rather about the fact that certain others havn't been rationed, and that in the case of some rationed items unadministrable plans have been attempted.

Sugar and coffee aren't headaches any more—except to a few unfortunates whose appetites for these commodities are abnormal. To the rest of us, their rationing is now just a routine part of our lives. But think of the long lines of people waiting in front of coffee stores before it went into effect!

Fuel oil rationing, on the other hand, *is* still a headache and will become much worse a one as time goes on. And why? Because a college professor, with all the good intentions in the world, drew up the most stupidly and unnecessarily complicated plan that could be imagined. Gasoline rationing would not be a problem at all if two things had been done in time: first, nation-wide rationing put in at the outset, when every intelligent observer knew it had to come eventually; and, second, preparations made for just such emergencies as the one that developed recently. It *could* have been done. But now, confidence in the whole administration of gasoline rationing is destroyed.

Where do we go next? Well, in the first place, we need a rationing administrator of the Jeffers type. He comes nearest to representing the ideal sort for this job. He is tough where one has to be tough for such a task: deep down in his determination to do what he sees necessary, without letting anyone sway him from his decision. Henderson wasn't really tough. He talked tough, and waved his big cigar around, and enjoyed appearing to be uncouth, but he didn't get tough with labor and the farm bloc at the time when such an attitude would have paid: that is, at the very beginning when he was establishing policies. He surrounded himself with an ill-assorted group of assistants, some honest but impractical theorists, and others intellectually dishonest theorists. The minority of sound, practical guys never had a chance. It is to be hoped that there will be a general house-cleaning when moving-day comes for Henderson.

As to his successor, the leading contender, Senator Brown, does not seem to have what it takes. Amiable, intelligent, and diplomatic, it appears that he could be pushed around. Here's hoping his selection will be reconsidered.

Probably worth careful thought is the suggestion that rationing and price-control be put in the hands of two separate administrators.

But whatever is done, and whoever does it, let this be the cardinal principle: The American people aren't opposed to rationing; in fact, they want far more of it, if it will help to win the war. What they *are* opposed to is the sort of delays, mistakes, weakness, and mal-administration, that have characterized our rationing program to date. They are also opposed to long advance notices of rationing, as in the case of canned foods, and to the type of defensive explanation which accompanied that program.

They'll give up their shirts and their girdles and their brass cuspidors if they know that the guy next door gives up his too. This is particularly true if they are enabled to feel that the hired men who do the rationing know what it's all about.

Let's Look Before We Leap

Washington is studying the possibilities of applying to American industries the policy of concentration of production in nucleus plants. The survey is being made industry by industry. Thus far, most statements made by officials indicate that concentration of the textile industry is not considered probable. One high authority stated that the impulse in this industry would come, if it did at all, from a shortage of repair parts rather than from a shortage of raw materials or manpower.

The further assurance is given that industries will be "consulted" before any plan is put into fact. Although too often under the present set-up such consultation has been "after the fact," nevertheless hope springs eternal and industrialists are naive and gullible people anyway. So, in the hope that they will have a voice in this particular party, it behooves them to become informed on the progress of concentration in England.

Toward that end, we are presenting on page 70 of this issue a progress report on experience in that country. It is a sequel, but by no means a final sequel, to a report previously published here (TEXTILE WORLD, August, 1942).

If textile manufacturers will read these articles carefully, we believe they will come to the following conclusions:

1. If concentration of textile production is necessary for the successful prosecution of the war effort, then no argument against it is of any importance whatever.

2. If it is necessary, *advance* consultation with the industry, and the development of some effective form of self-government by the industry, are "musts."

3. If it is not vitally necessary in the war effort, then for God's sake let's leave it alone! It means a sharp departure from democratic processes, and moreover it dulls the hope of any reasonably sound post-war economy. That's a lot to lose. We'd better make sure what we can expect to gain before we play for such stakes!

Let's Finish It NOW!

Once again, the bright light of an early victory tends to lure keepers of the faith to destruction: Germany on the run in Russia, the Axis pinched in North Africa, Italy bombed often, Japan punished in the Pacific. It all seems to add up to good news.

But wait a minute! The worse it gets for the Axis Powers, the more desperate they will become. They still have a grip on most of Europe and a fair share of the Far East. They still have vast armies and materiel and ships. Nothing now will prevent them from ignoring whatever laws of international agreement and individual decency they may have missed to date.

The last stages of this war will be infinitely more horrible than anything that has gone before—unbelievable though that may seem. Victory is yet to be won. Defeat is still not impossible, if we try to ride easy. Our last push—that starting today—must give no quarter to our enemy or to wishful thinking. Every pause to rejoice in temporary victories must be paid for by the lives of American men and women.

Let's finish it *now*!

1943 to See All-Out War Economy

New war production records, civilian shortages, foretaste of victory foreseen

THE **MOST APT COMMENT** one can make on the 1943 outlook is: "You ain't seen nothin' yet!" Those who thought 1942 was a big year in war production, a hard year in civilian shortages, a tough year in Governmental controls should hold their superlatives for 1943, the first really all-out war year. . . As a sample of what's ahead, we present below opinions from editors of McGraw-Hill publications serving the most vital fields in our present economy, and then follow with our own indication for the textile industry itself. —*Editor.*

General Business

By S. S. PARKER,
Business Week

In 1943, the war will catch up with America, and America with the war. With victory as the promise, our soldiers and sailors will, for the first time, be going into battle en masse. They will be equipped with the fruits of a production effort which, already in high gear, will next year attain its peak. And civilians, who so far have had but a foretaste, will really begin to experience the shortages, rationing, and drastic income controls which modern war necessitates. This pattern will fundamentally affect business operations. Over the horizon will loom larger and larger the problems of post-war readjustment. Biggest day-to-day headache for industry will be manpower; production, in materials and machine phases, will be strained ever harder to attain a further 15% increase in output. And commerce must face new Federal controls over distribution. . . . But the current business outlook—as in 1942—will depend essentially on the course of the war. First, the prospective duration of the conflict itself will alter with the tides of battle. More, the needs of war may later enforce changes in the total, proportions, and types of weapons we are now set to produce. The present program is for a rise in war expenditures from the current annual rate of 75 billion dollars to one of 100 billions by late 1943; a cut in construction, in order to release materials for arms; an emphasis on ships first and planes second, at the expense of ordnance. . . . In short, America in 1943 will be into a really all-out war economy. But the very mobilization of our huge strength which that implies will itself turn American thinking to the future beyond victory.

Food Industry

By L. V. BURTON,
Editor, *Food Industries*

No great imagination is needed to foresee the strain that will be placed on the food processing industry of the United States, for it is geared to a normal food demand of about 135,000,000 persons. This industry must process and preserve food for at least 20,000,000 persons in Great Britain, at least 50,000,000 more in Russia, and still more people in Iran, and North Africa. Previous estimates of a demand for food for only 200,000,000 persons are being pushed upward as our expeditionary forces occupy new areas and undertake to aid the native populations with food from the United States. . . . Food manufacturers are faced with a challenge that has never been seen before. They will make good, but our Allies can be fed only by decreasing our domestic consumption of industrially processed foods, especially the foods we enjoy most. 1943 will be a year where weight reduction for the individual will be somewhat easier than in the past.

Chemicals

By S. D. KIRKPATRICK,
Editor, *Chemical & Metallurgical Engineering*

Chemical production has shown marked increases. The Federal Reserve Board's index rose in October to 172. The rise in the WPB munitions index from 100 in November, 1941, to 381 for September, 1942, is also a measure of certain chemical activities that can only be hinted at in present reviews. . . . Chemical industry in 1943 may be expected to maintain present levels of production and perhaps increase them for some commodities such as those required for the synthetic rubber and aviation gasoline programs. Greatly increased production of alcohol for butadiene and of benzol for styrene are indicated. More chlorine will be needed for the magnesium output, which may be expected to double at least during 1943. Aluminum reduction from domestic bauxites will require greater quantities of soda ash, as will expanded production of glass for containers. The over-all prospects for chemical industry are for production levels that will utilize all available capacity for plants, equipment and manpower.

Power

By PHILIP W. SWAIN,
Editor, *Power*

Of the four basic requirements for war production—men, materials, machines and power—only power has been available in ample quantities. On the industrial front the history of the war to date is largely one of shortages, "bottlenecks" and rationing, yet electric power has met every industrial requirement, with enough left over to serve all civilian demands—essential and nonessential. No ration card is needed; you merely turn on the switch. . . . There is little reason to expect power shortages in 1943. Even the admittedly serious shortage of fuel oil on the East Coast can be discounted as far as power is concerned. Most of the affected oil burning power plants have already converted to coal, and the coal-burning plants are protecting themselves against possible interruptions in coal shipments by enormous storage piles (generally 3 months supply) at the plants.

Machine Tools

By BURNHAM FINNEY,
Editor, *American Machinist*

The machine tool industry goes into 1943 operating at a rate of over $1,500,000,000 a year. That is close to 15 times the volume in an average peacetime year. It is estimated that its total shipments during the last 12 months amounted to more than $1,300,000,000,

or an increase of about 75% over 1941. With the exception of the aircraft industry, machine tool builders have expanded their output more than any other American industry to help beat the Axis. Every machine tool manufactured in 1942 went into a war factory either in this country or in a nation allied with the United States. Greatly accelerated demand for machine tools from the aviation industry, which is enlarging tremendously its production of planes during 1943, has resulted in pressure on machine tool builders to speed further their deliveries. However, backlogs in the industry are not evenly distributed and unfilled orders of numerous companies are shrinking as production exceeds new business booked. It is believed that machine tool needs for the war effort are now at a peak and before the end of the coming year, a tapering in production will be noted. However, machine tool requirements are expected to continue heavy as long as the war lasts.

Aircraft

By LESLIE NEVILLE,
Editor, *Aviation*

In 1942 the aircraft manufacturing industry in the United States made use of the plant facilities built during 1941-42 to turn out 49,000 airplanes, outproducing the total Axis figure by many thousands of planes, and bringing the United Nations total to nearly double that of the Axis nations. . . . Domestic airlines flew 1,560,000,000 passenger miles, an increase of 14% over 1941, with a fleet of airplanes reduced from 352 to 165 by equipment levies by the Government. Load factors rose from 67.8% to 80%. Air express poundage increased 106% to 39,570,442 lb. Daily miles flown, per plane, ranged from under 1200 to 1500. In addition many confidential missions were performed by the airlines for the armed forces. . . . Our combat aircraft demonstrated their efficiency and quality by scoring against all our enemies at a loss rate of 5 to 1 and altered the balance of sea power in the Pacific in our favor. Long range bombers, airships and the private planes of the Civil Air Patrol, which grew to 65,000 members, cleared the Atlantic coastwise shipping lanes of enemy submarines.

Construction

By WALDO G. BOWMAN,
Editor, *Engineering News-Record*

As a year of construction that broke every record on the books comes to a close, the construction industry is forced to ponder statements from Washington that "drastic" cuts in construction volume are certain in 1943. Yet the worst that Government statisticians have been able to predict is about a 35% reduction, which will still leave 1943 engineering construction volume above any prewar year. Here is dramatic evidence of the essentiality of construction to the continuing war effort. It may be further noted that construction will greatly accelerate in theaters of operation all over the world in 1943. And this foreign activity is not included in the figures that Washington cites. From Australia to Africa, from the Equator to the North Pole, both Navy and Army will be building bases and airfields, camps and transportation facilities, with American construction men, materials and machines. To domestic construction must be added construction around the world. And the aggregate may readily bulk as large as the past year's record domestic volume of $12,821,000,000.

Outlook in the Textile Industry

By DOUGLAS G. WOOLF
Editor, *TEXTILE WORLD*

THE AMERICAN PEOPLE can count on enough textiles in 1943 to keep them warm, modest, and attractive. They will have to get along with cuffless trousers, shorter shirt-tails, less glamorous nighties, experimental hosiery, rubberless girdles—yes, and without zoot suits. But these "privations" will mean less than nothing to the great majority—and will furnish a welcome cause for griping to the minority which loves to suffer.

How long this promise can be kept beyond 1943 is any man's guess. It depends—as everything in the world depends—upon how long the war lasts. If, a year from now, we find ourselves still facing an indeterminate number of years of warfare, clothes rationing will already have been put into effect, and civilian supplies will become slimmer and slimmer. If, as seems more likely at this writing, we can see the end of the war in 1944, then we will be able to coast along without any serious epidemic of patched trousers, frayed cuffs, and foundationless foundation garments—at least so far as the supply factor is concerned.

The demand factor is something else again. Right now, most people seem to feel flush, and are anxious to buy a dozen or a case or a gross of anything they can find on the market. As 1943 taxes start to take their toll, and as compulsory savings go into effect, and as more non-essential industries are shut down, Mr. and Mrs. John Q. Citizen may hesitate to buy that extra suit, or dress, or girdle—not because they are unavailable—but because the purchase-money is requisitioned by Mr. Morgenthau.

All the above has been written from the standpoint of the consumer. It means that, from an over-all standpoint, there is no prospect of a shortage in textiles at retail. From a selective standpoint, there *will* be shortages which, at the point of sale, will seem startling to a people used to a plethora of what they want when they want it. There will be an increasingly limited choice of fabrics and garments. There will be less and less chance to get a particular garment, made of a particular fabric, and in a particular size.

From the other viewpoint—that of the textile trade itself—shortages are already serious. Gray goods are being sold on a high priority basis. Cutters-up find it increasingly difficult to get the fabrics they need. The time-lag between the weaver and the retail counter cushions the ultimate consumer against a nearby pinch. If, as indicated previously, the war promises to be prolonged beyond 1944, this shortage at the source will lead to clothes and fabric rationing long before there is not enough to go around.

Now to turn to the status of the primary textile industry itself.

The unbelievable has happened. Output of domestic mills in 1942 set the fourth successive annual record. TEXTILE WORLD's index of mill activity for the last year stands tentatively at 200 (on the basis of 1923-25 as 100) comparing with 188 in 1941, 142 in 1940, and 132 in 1939.

In other words, all preconceived notions of a feast-or-famine industry operating on a two-year cycle—one good year followed by an off year ad infinitum—have been discarded for the duration.

It is significant to point out that the index for the last four years averaged 164, as compared with an average of 103 for the preceding decade (1929-1938)—a gain of approximately two-thirds.

But what lies ahead? Here is the probable answer: The textile industry will continue to be one of the brightest spots in the industrial picture because it supplies both a vitally essential military need and a vitally essential civilian need. The industry's production curve will continue to be high, but it may stop making records.

Help Wanted—Female

Textile mills need planned program for securing and training women workers

MORE WOMEN WORKERS must be attracted to textile mills to counteract the growing shortage of manpower. This calls for an organized program by textile companies, individually or collectively through their trade associations, to get more women into the mills and to train them for the work they are to do. This was the concensus of a group of New England mill and textile school officials attending an open forum in Providence, R. I., Nov. 27, to probe the subject of "Employment of Women in the Textile Industry to Replace Men Who Have Entered the Armed Services." The forum was sponsored by the Rhode Island Section of the American Association of Textile Chemists & Colorists.

Leading the discussion were Carl Medde, Lorraine Mfg. Co., worsted industry representative; Charles Sedgwick, Esmond Mills, woolen industry representative; H. B. Sturtevant, vice-chairman of the Section, representing cotton piece goods; William D. Fales, textile department, Rhode Island School of Design, who spoke on "The Present Training of Women"; and Thomas Goulet, Woodlawn Finishing Co., whose paper on the cotton yarn industry was read by R. W. Joerger, secretary of the Section. Howard V. King, chairman of the Section, presided.

One of the major obstacles to increased employment of women in the textile industry is the higher wages paid to women in some of the other industries on war work and on Government-sponsored war projects. The feeling was strong that most mills cannot afford to pay wages comparable to those in munitions plants, nor can they finance a long period of non-productive training. Some speakers, in fact, emphasized that there is an urgent need now for women workers, and many mills cannot defer their employment for several weeks, or even months, until they can complete a training course outside the mill. There was general agreement that to make mill work more attractive to women, much could and should be done to improve working conditions. Better sanitary conditions, rest rooms, and recreational facilities were among the improvements suggested.

IN MANY DEPARTMENTS of textile mills there are jobs, heretofore handled exclusively by men, which women can perform satisfactorily, particularly if some male employees are retained to do the heavy work. Further, there are some occupations at which women have proved superior to men. Mr. Medde pointed out in this connection that, in general, women are better than men as examiners and inspectors. Mr. Fales concurred in this opinion and asserted that women excel in precision work and in virtually all types of methodical routine tasks. Mr. Sturtevant added that women are especially suitable as laboratory technicians, and, aside from the finishing and put-up departments, where they have always been used, to do packing and invoicing work on finished products.

In the paper prepared by Mr. Goulet were listed 15 dyeing operations which women could take over; in one plant women are at present dyeing all lots weighing up to 50 lb. on Buhlman skein dyeing machines. Mr. Sedgwick, of Esmond Mills, asserted that in the picking department "women can do everything but lift bags."

ORGANIZED TRAINING PROGRAMS for women to help counteract the male labor shortage were advocated by Mr. Fales, of Rhode Island School of Design, and Francis Tripp, of New Bedford Textile School. Mr. Fales contrasted textiles with the machine tool industry, where women are being systematically trained to operate machines. Such a program in textile mills, he said, would call for "well defined objectives," such as specific laboratory and supervisory jobs which would be sufficiently attractive to induce women to study.

Mr. Tripp stated that housewives are attending the New Bedford school, learning to do work in dyeing, bleaching, and chemistry; and a New Bedford manufacturer has agreed to employ every woman graduated. He urged a planned program designed to meet the labor pinch, with clear objectives in view—"Something which has not so far been forthcoming in the textile industry."

Promise of action along these lines was given in the closing motion, passed by the Rhode Island Section, that the American Association of Textile Chemists & Colorists "Endorse a training program and establish liaison between textile schools and the industry." Further study was urged to find solutions to the problems of how to compete with high wages in other war industries, how to finance training programs, and how to fill job gaps now when the shortage is becoming serious.

At the Narrow Fabric Co., Reading, Pa., women are being trained as braiders to release men for war work and to replace men who enter the armed services. Thus far twelve women have completed a six- to eight-week training course in the operation and care of braiding machines. Pictured is Mary Ann Ludwig, who proved so adept at her new work that she already has been entrusted with supervisory duties; primarily, she acts as an examiner and instructor of trainees, but she also functions as a machine fixer, making adjustments and minor repairs on the machines.

INFRA-RED IN TEXTILE INDUSTRY

"Expected to prove of considerable interest to textile mills are four new infra-red lamps in 250- to 1000-watt sizes, designed for industrial or commercial drying and heating jobs." This announcement appeared in the Textile Equipment News Department of the May, 1940, issue of TEXTILE WORLD. By the middle of 1941 several plants had installed experimental infra-red drying units, and one carpet company had progressed far enough with its trials to permit the results to be reported in our June, 1941, issue. A little later gas-fired infra-red burners were introduced to the textile industry. Today numerous mills are utilizing one or another of these two types of infra-red units to speed up drying, ageing, and carbonizing operations. In fact, infra-red drying has gained favor so rapidly that it must be classified as one of the most important of recent developments in textile processing. On the front cover of this issue of TEXTILE WORLD is illustrated one of two infra-red drying units installed in the Pell City, Ala., plant of Avondale Mills to increase production of Sanforizing machines. This and other installations are described in the article immediately following. Use of infra-red lamps in carbonizing is described in an article beginning on page 58. Application of gas-fired infra-red units in textile processing is discussed in a third article beginning on page 60.

Infra-Red Boosts Drying Speed

Supplementary units advantageous for increasing output of present equipment

THE NECESSITY for speeding up production of a variety of textiles for military and civilian use has contributed to the quick adoption of infra-red drying units. One of the important advantages of such units is that they take up comparatively little floor space and can be employed, therefore, to supplement drying equipment already in place. Included among the present applications of infra-red lamps are in Sanforizing of cotton piece goods; dehydration of thread; and drying of carpets, velvets, and plushes. The following descriptions of infra-red drying installations in textile mills are based on information supplied by the Fostoria Pressed Steel Corp.

Drying of plush at Sanford (Me.) Mills has been speeded up by installation of an infra-red unit in front of a conventional steam-type dryer which was not turning out the desired yardage. The arrangement of this unit is shown in Fig. 1. Each row of reflectors shown in the sketch represents 5 strips of 6 reflectors; that is, 30 reflectors in each section, or a total of 90. Each reflector accommodates a 1000-watt lamp. The cloth, 54 in. wide, after passing through squeeze rolls not shown in the sketch contains 8 oz. of moisture per yd. It proceeds at a speed of 75 ft. per min. through the infra-red unit to the steam dryer. Approximately 12.5 lb. of moisture is removed per minute. It is estimated that production has been increased 25% by installation of the supplementary infra-red unit.

An interesting application of an infra-red unit is that at Textile Thread Co., Watertown, Mass. Former practice in this plant was to wind the thread on spools, place it in ovens, and allow it to

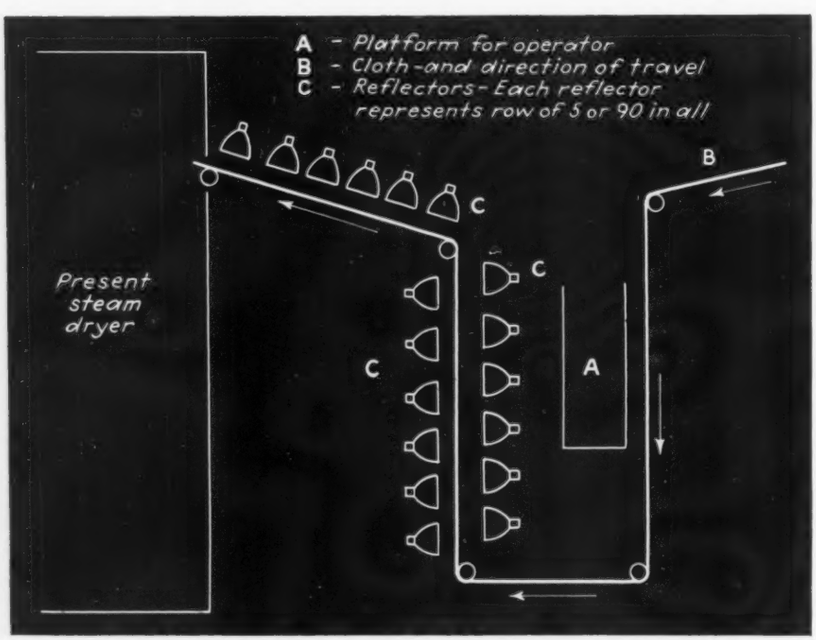
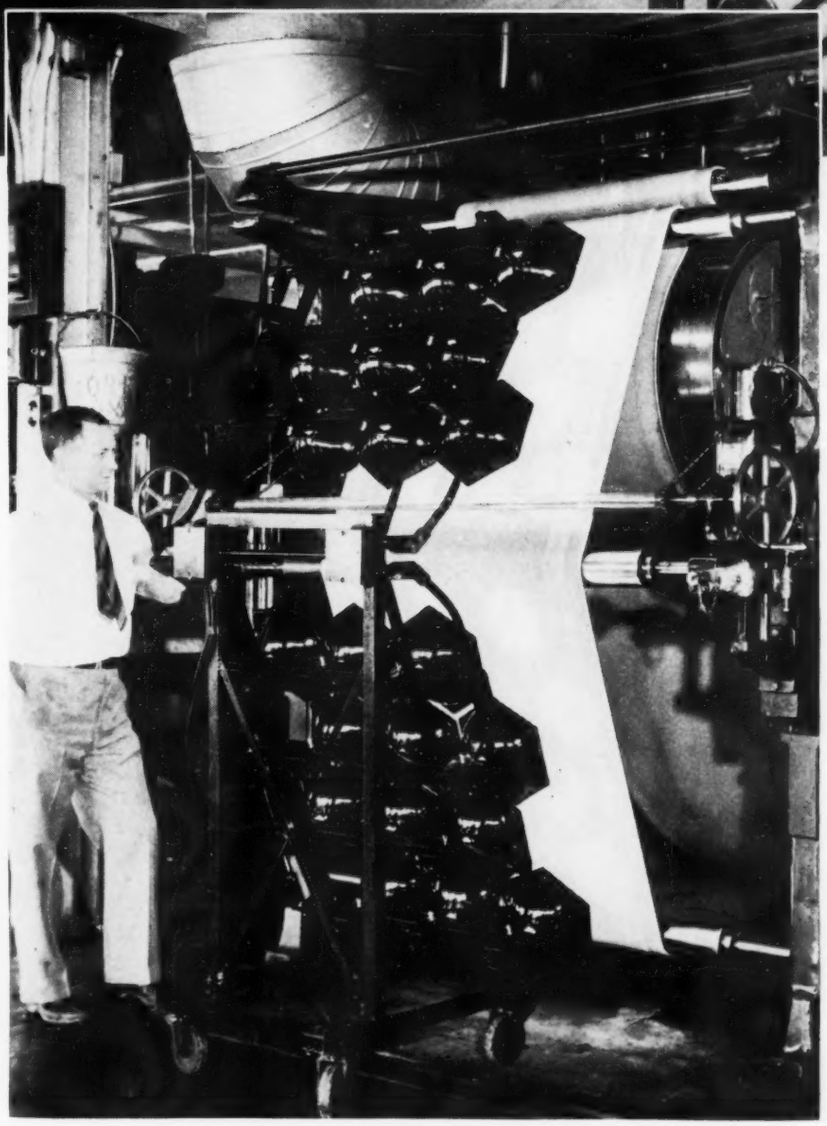


Fig. 1. Sketch of an infar-red unit which supplements a conventional dryer for plushes at Sanford Mills.

Photos courtesy of Fostoria Pressed Steel Corp.

Fig. 2. Drying of thread is carried out at 90 ft. per min. with infra-red unit at Textile Thread Co. (Above)

Fig. 3. Infra-red unit at Avondale Mills increases production of Sanforizing machine. (Right)



dry for 4 to 16 hr. The amount of moisture removed was 7% and the average rate of production was 100 lb. per 4 hr. Installation of the Fostoria Even Ray unit shown in Fig. 2 boosted production to 100 lb. per 1 hr.—a 400% increase. This unit consists of 40 275-watt lamps mounted in a canopy which can be easily raised or lowered. The thread is unwound from the spools at the right, passes through the drying zone at a speed of 90 ft. per min., and is rewound on spools at the left. A polished metal sheet mounted under the travel of the thread increases the efficiency of the drying operation by reflecting the rays.

At the Pell City, Ala., plant of Avondale Mills installation of two infra-red units has permitted the production of Sanforizing machines to be increased from 18 to 21 yd. per min.—a gain of $16\frac{2}{3}$%. One of these units is shown in Fig. 3. This unit is composed of 500-watt lamps, giving a projected pattern of 7 ft. Lamps and reflectors are

mounted on a specially built frame provided with casters. Reflectors are nested three to a row to give complete coverage with the rays of the blanket as it passes in front of the unit. An incidental and unexpected advantage which has been noted at Avondale Mills is that life of the blanket has been increased by installation of the infra-red drying unit.

Infra-Red Applied to Carbonizing

Has several advantages in the final baking operation of continuous method

By F. D. SNYDER

Engineer, Westinghouse Electric & Mfg. Co., Boston

USING HEAT for so many of its operations, the textile industry offers perhaps the greatest of all possibilities in the application of radiant heat. Nevertheless, as was originally true of the automotive industry, development of textile equipment using this new heating method has been slow. This has been due largely to absence of previous experience to serve as a guide in equipment design and installation. Many possibilities have not been explored due to lack of funds or time required for the necessary cut-and-try testing. However, pressure for increased production plus scarcity of conventional drying, baking, and ageing equipment necessary for expansion are causing more and more textile manufacturers to consider radiant heat as a possible answer to some of the urgent problems now confronting them.

In some instances the answer provided by radiant heat has exceeded the most optomistic expectations. A most recent example is that of a New England woolen mill and a textile equipment manufacturer who have designed and installed an infra-red carbonizer which is producing most satisfactory results.

Carbonizing of woolen cloth ordinarily is carried out by saturating the fabric with a weak solution of acid, squeezing the cloth to remove excess acid, drying in a tenter dryer (such as shown at the left of Fig. 1) heated by steam coils and air circulators so that a temperature ranging from 190 to 220° F. is maintained. The dryer illustrated accommodates approximately 125 yd. of cloth and operates at various speeds, depending upon the weight of the cloth. An example is 16-oz. Navy melton which is dried at a speed of 25 yd. per min. The cloth passes from the dryer section directly to a convection type baker (not illustrated) similar to the dryer, but approximately three-fourths its length and having a capacity of 100 yd. of cloth. The temperature of the air in the baker (260 to 265° F.) is sufficient to reduce the shives, burrs, and other vegetable matter to carbon.

FINAL BAKING in the newly developed process is accomplished in the radiant-heat equipment illustrated at the right of the operator in Fig. 1, and shown in close-up in Fig. 2. The heating cabinet is approximately 7 ft. high, and 7 ft. wide, with a depth of 2.5 ft.

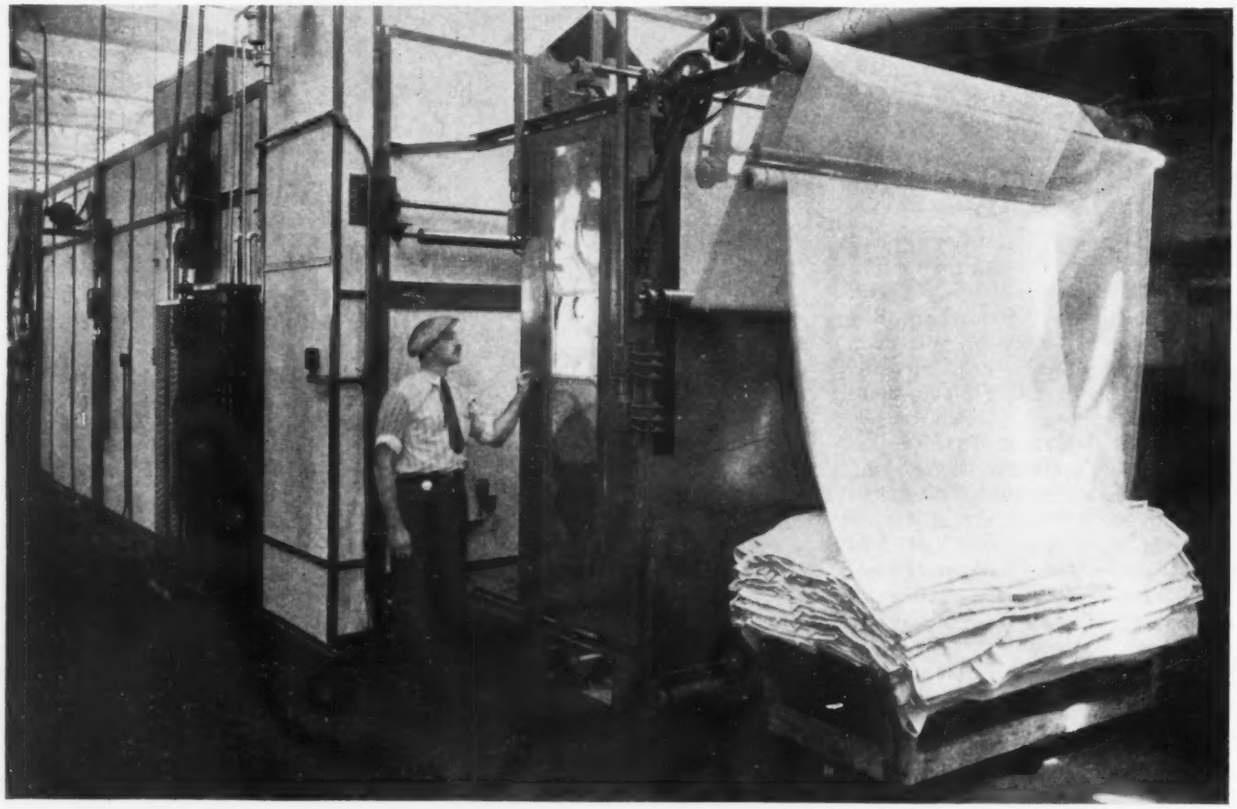


Fig. 1. Infra-red baking unit for carbonizing range installed by large New England woolen mill; cloth passes through conventional tenter dryer at left and then through the infra-red unit at right.

Fig. 2. Close-up of baking unit showing two banks of infra-red lamps; each bank contains 175 250-watt lamps mounted on 6-in. centers.

It consists of two banks of 250-watt, 115/120-volt, R-40 bulb Westinghouse drying lamps having self-contained sealed-in reflectors. The two banks, facing each other, are approximately 15 in. apart. Each bank consists of 175 lamps located in rows 5 in. apart and with the lamps on 6-in. centers in each row.

The sides and ends of the cabinet are inclosed with stainless sheet steel. In the sides of the cabinet the necks of the lamps are inserted through holes in the sheet steel to connect the lamps with the porcelain shell sockets located on the opposite side of the sheet. This serves the double purpose of protecting the lamp bases and the sockets from the extreme heat and of increasing the efficiency of the unit by re-directing the radiant heat reflected from the cloth and which otherwise might be lost through the interstices between the lamps. Incidentally, when available, bright Alzak aluminum, having a much higher infra-red reflection factor than steel, would be better suited to this purpose. The cabinet is open at both top and bottom. This allows the volatiles driven from the cloth to pass out of the top by chimney action. Forced ventilation is unnecessary and undesirable.

Cloth is fed from the dryer into the baker over a roller at the bottom and thence vertically upward to the top where it passes over a roller and downward to a roller at the bottom. Then the cloth again passes vertically upward and out of the carbonizer. By this means one side of the cloth is exposed to one bank of lamps and the other side of the cloth to the second bank of lamps. The baker has a capacity of 21 yd. of cloth. At the normal speed of 25 yd. per min. the cloth is exposed to the direct rays of the lamps about 20 sec. on each side.

Of interest is the fact that the lamps are wired in four equal groups; hence it is possible to vary the baking in 25% steps by the simple expedient of switching off or on groups of lamps. The drying lamps, although designed for operation in multiple on 120-volt power or lighting circuits, are adapted for use on the available 550-volt power circuit by wiring them in series of five.

Advantages of infra-red heat for carbonizing ranges as brought out by this installation can be summarized as follows:

1. Lower equipment and operating costs. The infra-red baker costing approximately $1,000 is doing the work of a steam-heated baker costing approximately $10,000. Savings of 25 to 30% in operating costs with the new method are indicated.

2. Less floor space required. In this particular installation the infra-red carbonizer occupies about one-eighth of that required for steam-heated equipment of same capacity.

3. Reduced spoilage. The amount of latent heat in a conventional baker is sufficient to scorch cloth, even though there is only a brief interruption in the flow of cloth through the cabinet. The infra-red baker stores little heat. Further, as circuits to the cloth-driving motor and to the lamp banks are interlocked, the heat is turned off automatically with stoppage of the cloth. For this reason, there is no spoilage of cloth due to stoppage for any reason.

4. Greater flexibility. The lamp banks are wired so that the amount of heat can be varied to meet varying requirements. This provides instant flexibility not possible with a steam-heated dryer.

5. Elimination of warm-up period. Convection ovens depend upon heated air to convey energy to the cloth being processed. This means that a considerable warming-up period is necessary to bring the air up to the required temperature. With infra-red, the energy is projected onto the cloth direct; hence, no preheating period is necessary. This makes possible efficient intermittent operation with no consumption of energy during temporary shutdowns, such as lunch hour, etc.

6. Improved quality. Cloth carbonized with radiant-heat baking is less resistant to dye than that processed by the conventional method. This is a particularly desirable feature when an appreciable percentage of the cloth is to be dyed. When cloth is baked in a convection oven, it must be thoroughly dry before it enters the baker; otherwise when the cloth is dyed it will show streaks. This is due to the fact that the dye will not take on the section of cloth that was at all damp when it entered the baker. With the radiant-heat baking, it seems to make no difference how damp or even wet the cloth is when it enters the baker and subsequent dyeing turns out perfect.

7. Increased production. On existing cloth dryers or carbonizers it is possible to increase the output. If, for instance, a cloth dryer cannot handle the present production desired, it is quite possible to install a radiant-heat dryer in back of the present dryer and allow the

radiant heat to finish drying instead of baking as the radiant heat does in the carbonizing range. Also, present conventional carbonizing ranges can be made to handle more material by using the present drying and baking sections for drying only and installing a radiant heat unit to do the baking. Limited experience has shown that production speed can be boosted 30 to 40% by installing radiant-heat banks as described above.

Augmenting these immediately apparent advantages, it is quite possible that others will develop on further use of the new equipment. For example, the cost of repairs, upkeep, etc., is expected to be less.

This experience with infra-red, or radiant heat, should encourage further investigation on the part of textile manufacturers faced with increased production demands or the purchase of heating or drying equipment.

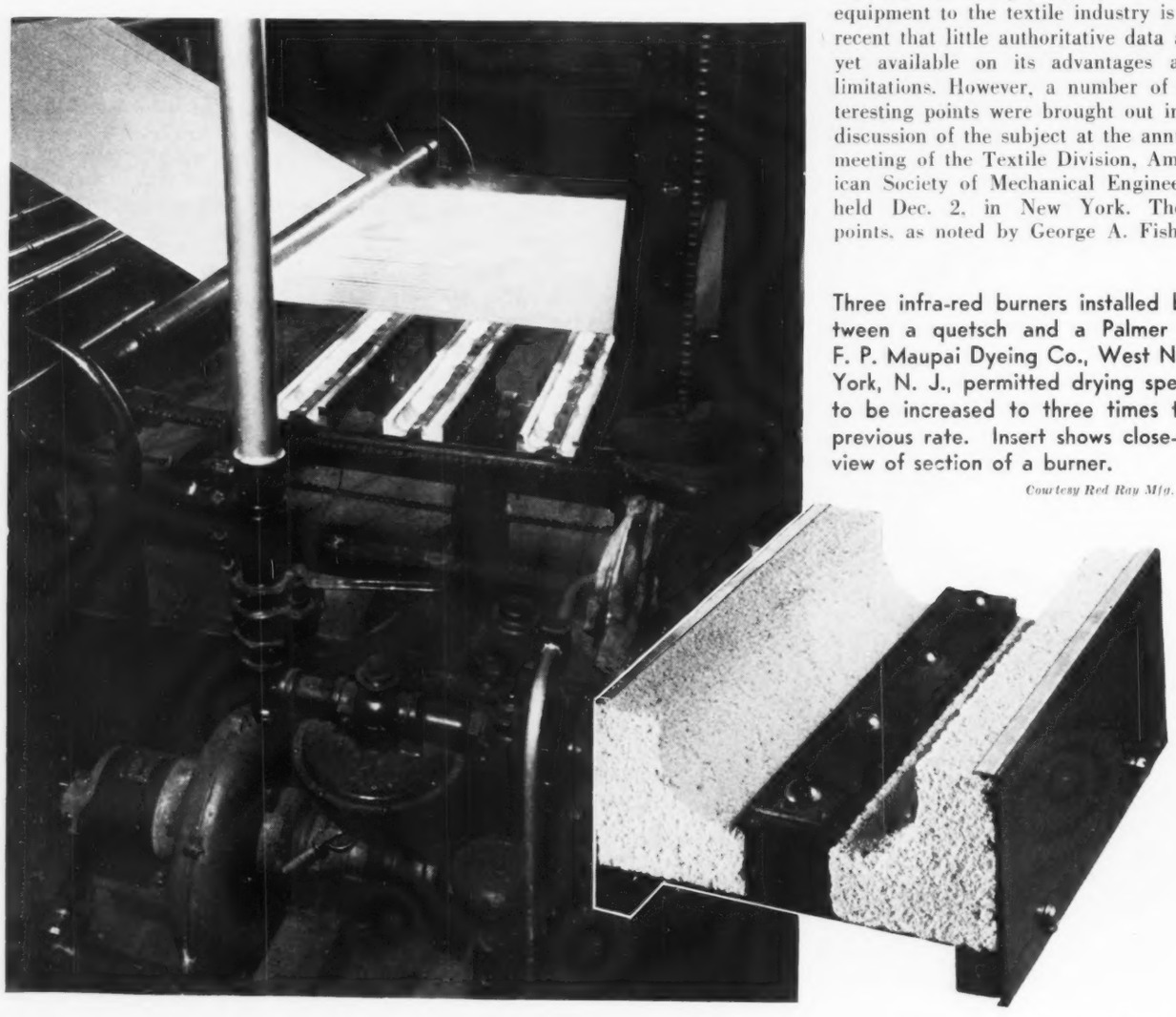
Use of Gas-Fired Infra-Red Units

In drying, curing, and ageing processes; discussion at textile engineers meeting

HIGH-TEMPERATURE DRYING and curing of textiles with the aid of gas-fired radiant-heat generators, although a comparatively recent development, is already being employed in a number of mills. To date gas-burning infra-red generators have been employed mainly in processing woven fabrics, but their application is now being extended to drying of knit goods and warp sizing of yarn. Essentially, the generator consists of a burner with a special refractory surface. As gas is burned over this surface, it becomes incandescent and infra-red rays are produced. When these rays strike the surface of the yarn or fabric, they are immediately converted into heat. Practically any flammable gas, manufactured or natural, can be employed for generating the rays. The temperature can be controlled within a wide range by proper admixture of gas and air in various proportions.

Most installations of gas-fired infra-red generators made thus far have been in conjunction with existing drying equipment, such as dry cans, loop dryers, etc., to speed up the drying speed and increase output of the machines. Two such installations are shown in the accompanying illustrations.

Introduction of gas-fired radiant-heat equipment to the textile industry is so recent that little authoritative data are yet available on its advantages and limitations. However, a number of interesting points were brought out in a discussion of the subject at the annual meeting of the Textile Division, American Society of Mechanical Engineers, held Dec. 2, in New York. Those points, as noted by George A. Fisher,



Three infra-red burners installed between a quetsch and a Palmer at F. P. Maupai Dyeing Co., West New York, N. J., permitted drying speed to be increased to three times the previous rate. Insert shows close-up view of section of a burner.

Courtesy Red Ray Mfg. Co.

of Infra-Red Ray Equipment Corp., in a paper "Infra-Red Drying of Textiles," and amplified by various engineers who participated in the discussion are summarized below.

INFRA-RED RAYS can be generated by means of special lamps or gas-fired burners. The principal advantages of infra-red drying are the high temperatures which can be obtained, the penetrating power of the rays, high efficiency, low transfer loss, and ease of control. The high temperatures obtained permit quick drying and are particularly advantageous in curing or ageing operations where textiles which have been treated with chemicals must be subjected to temperatures of 400°F. or higher to complete the chemical reaction. High-temperature curing is necessary, for example, in the application of various water-repellent, crease-resisting, mildewproofing, and coated finishes.

Gas-burning units are less expensive and take up less space than do a battery of infra-red lamps of equivalent capacity. Thus, to produce 3,780,000 B.t.u., 1112 1000-watt lamps with 8-in. diameter reflectors would be needed which would require a bank 36 in. wide and 55 yd. long, whereas with gas-fired units the bank of burners would need to be only 36 in. wide and 3½ yd. long. However, there are many other factors which should be considered before an infra-red unit is installed. If, for instance, a mill is thinking of replacing a steam-heated dryer with infra-red, it should look into the matter of costs of steam, electricity, and gas. It should find out how much old equipment would have to be eliminated and how much new purchased. It must remember that the supply of gas is not inexhaustible; and it should determine whether or not its gas company is in a position to furnish the extra amount of gas needed to run the infra-red generators.

Attempts to measure the temperature on the surface of fabrics being dried by gas-burning infra-red units indicate that it may be as high as 800 to 1000°F. This high temperature apparently does no harm to the fibers as long as some water is present and the material is not bone dry. Acetate fabrics dried at high speed at a surface temperature of 800°F. were not injured. With conventional steam-heated dryers, common practice is to dry textiles to a point below their normal regain. With infra-red there is danger of harming the fibers if one tries to get the material actually dry, although it can be done by using low capacity furnaces. It should be possible also to employ infra-red units in conjunction with automatic moisture controllers such as are now employed by some mills on slashers, tenter frames, and other drying equipment.

Courtesy Carbomatic Corp.

Five gas-fired radiant-heat generators installed on tenter frame at Pilgrim Piece Dye Works, Brooklyn, N. Y. Beyond the burners are three air blowers which drive accumulated vapor from the fabric before it goes to the Palmer (not shown in photograph) at the end of the tenter.

THE HEAT generated by the gas-fired burners actually is a combination of radiant heat and convection heat. Under usual conditions it probably averages about 50% radiant heat and 50% convection heat, but may be as high as 70% radiant heat. For this reason, this method of drying is often referred to as drying with near infra-red.

There is considerable question as to what effect the color of a fabric being dried with infra-red has on drying speed. Theoretically black fabrics absorb infra-red rays to a greater degree than do white fabrics and hence should dry more quickly. However, there are factors other than color which influence the degree to which the rays are absorbed or reflected, and further study is needed of the effect of color on drying speed and required capacity of infra-red unit.

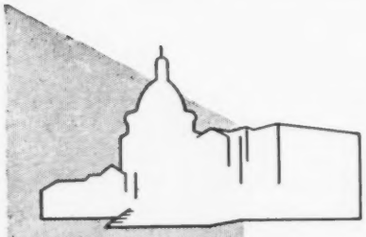
The time needed for the refractory surface of gas-fired units to heat or cool is about 10 to 20 seconds. Usually the unit is so arranged that the gas is shut off automatically whenever the machine with which it is being used stops for any reason. Such an arrangement prevents overheating or burning of the textile being dried.

The way in which gas-fired radiant-heat generators can be employed to increase the output of existing dryers is shown by the following example. Ordinarily in drying fabrics on a set of drying cans, the first third of the cans in the set is required to raise the temperature of the fabric and the water to 212°F. If an infra-red unit is placed in front of the cans, the radiant heat from it pre-heats the fabric as it passes over the burner so that it reaches the dry cans at a temperature of about 212°F. and with some of the water already evaporated. As a result, speed of the cans can be increased from 30 to 50%, depending on the capacity of the infra-red unit.

Use of gas-fired infra-red generators is still in its infancy. It appears certain, however, that there is a tremendous field for such units in the textile industry and that they will help to solve many problems involved in high-speed drying and in high-temperature curing of chemically treated materials.

Renegotiation Seen from Two Sides

Point of view of textile industry and of army; prospects of concentration



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By BLAINE STUBBLEFIELD

SINCE LAST APRIL 28, when Congress passed an act providing for the re-negotiation of war contracts, the Army alone has collected one billion dollars in price reductions and refunds.

Metal-working and other industries, contracting war gear at hastily-calculated high prices, made not too much fuss about re-negotiation. In fact many of them, notably aircraft manufacturers, voluntarily returned huge sums to the Government's coffers. Items as large as $20,000,000 have been received in Washington.

Some weeks ago re-writing of the price score began to hit the textile industry, and the story was different. The production of war textiles is substantially the same technique, the same economics, as production for peace. Textile industry spokesmen say they figured prices close to the hide, in lively competition, either through sealed bids or negotiation with hard-boiled Army and Navy bargain-drivers.

Here's how the executive committee of the Cotton-Textile Institute presents its case: (1) CTI does not question, but favors, the Government's opposition to excessive profits; (2) Army, Navy, Maritime Commission and Treasury all have separate authority to re-negotiate —presumably two or more of these agencies could re-negotiate separate contracts with the same company; (3) each textile supplier may be treated differently, even in identical lines of production; (4) contractors are unable to formulate financial statements, to know tax liabilities, to plan dividends, to allocate funds for maintenance and improvements, because they do not know when or how much refund will be demanded of them; (5) excess profits can be prevented without depriving management of financial knowledge of its own business; (6) materials and methods of the textile industry as supplier to the sources are not new; Government contractors are within OPA ceiling prices, excepting a few specialties; (7) if any excess profits are realized, they are 80% recoverable by the Treasury under the Revenue Act of 1942.

In view of these representations, the Cotton-Textile Institute has requested the comptroller general "to frame a program of re-negotiation which the Congress would look upon with favor and which would be economically sound and fair to all industries."

In addition, some members of the industry contend that the word "re-negotiation" implies an adjustment between two contracting parties. Actually, what the Government does is price fixing, they say, because while the contractors' records are examined, he has nothing to say and there is no negotiation.

Of course the procurement agencies have a reply to all this. But first, consider in broad outline just what this re-negotiation thing is. The war has its profit limitations, and its taxes, but these are fixed formulas. They treat everybody alike. To put it bluntly, the Government wants to treat different contractors differently. Re-negotiation is an instrument with which the Government rewards good suppliers and punishes bad ones. Whether or not you believe it is fair, or will work, the object is to get more production by the incentive route.

If you see a devil in the scheme, look again, and you will see another one. In many cases, the negotiating agency does not ask the producer for his *contract*, and all the cost sheets that go with it. The producer is asked to show his *balance sheet*. The balance sheet covers the manufacturer's civilian business and investments as well as his war production. Thus re-negotiation becomes a form of control over the private economy of the country.

Now, to give the other side, this is the Army's answer to the textile industry's bill of complaints:

1. You don't have to wait till a re-negotiator comes to your plant; you can call for one, and the Army's Price Adjustment Board says it will give prompt service. You are advised to write to your contracting agency.

2. The industry's complaint that different producers are treated differently is frankly admitted. PAB feels that its deals with individual companies fairly compensate for varying conditions and circumstances.

3. No company has to be re-negotiated by more than one procurement agency. The agency taking the largest part of the producer's output takes care of the adjustment for any others.

4. Obviously the re-negotiation program is a mixture of good and bad. About all any individual can do is study it and make suggestions to procurement agencies and to Congress.

ALMOST EVERY MORNING, in wartime, you find that something new has been added. You might say deducted, in the case of re-negotiation. Also on the horizon, and bigger than a man's hand, is a program of civilian industry concentration in 1943.

Concentration, as you must know, means taking the small remaining production of civilian goods out of many plants and concentrating it in a few.

Some branches of the textile industry have already been "concentrated" in England, with unhappy results. Reports indicated that hasty action, was taken, plants closed down, workers shipped off to other localities. Later it was found that some closings had been unnecessary, that some had been the wrong plants. The trouble was faulty administration, which is no argument against the principle.

Joseph L. Weiner, who recently succeeded Leon Henderson as chief of the Office of Civilian Supply, in announcing his concentration policy carefully refrained from mentioning any specific industries. He declined to elaborate later. OCS does not know, as yet, all the industries that will be concentrated, and doesn't want to upset anybody until it is sure.

So far, the concentration program is a set of generalities, although some initial industries have been moved into a few plants. Weiner has made two speeches in which he thoroughly explains the principles of concentration, and his present policies. Most informative of these is dated Oct. 21; every textile man should read it. The other speech, dated Dec. 11, is more or less along the same lines.

"The industries in which concentration of production is presently being considered are those whose operation are or will be substantially below capacity, but some of whose products are essential in wartime," says Mr. Weiner.

Another basic concept of the program is that other things being equal, concentration will be in the small plants. This policy has been laid down by Congress, with the object of helping them to stay in business. But from the war production point of view, large plants will be closed and converted to war items because they have more experienced managements and usually better equipment.

In general, plants located in industrial regions will be closed or converted, and those which use rural labor will get the concentration.

Specifically, on the question whether civilian textiles will be converted, no responsible official in Washington can be found to promise that they will not be. But as of today, their guess is definitely, NO.

The armed services still are taking all the cloth they can get in most categories and there is no letup in sight. The civilian population has been living extensively on inventory, and new production will be needed. Mr. Nelson has called for stockpiles of civilian cloth and clothing against possible transportation tie-ups. Lend-Lease requirements this year will be enormous. If this country is to clothe the naked world after the war, stockpiling to that end must be ordered as soon as possible.

Harris & Ewing

Joseph L. Weiner, who has succeeded Leon Henderson as chief of the Office of Civilian Supply

Responsible officials expressed their private opinion to TEXTILE WORLD that, for the above reasons, any appreciable concentration in textiles is unlikely. They said further that if there is any concentration it will be due to loss of manpower to the other war industries. This of course, might be prevented by a labor freeze order.

Of course the textile-machinery industry is hardly eligible for concentration. Most of it has already been converted to ordnance. The small amount of plants still producing for the industry is highly specialized; that is, most products are being made by only one or two manufacturers.

Other News From Washington

LEND-LEASE REQUIREMENTS in 1943 is a favorite subject of speculation. Of course the need is unpredictable. That is the main reason why the Quartermaster goes on ordering when, almost certainly, some of our own army's probable needs have been met. Liberation of some large populations and armies might come in 1943. China, the East Indies, and any or all of the over-run European countries, including Italy, will be in the bread and clothing lines sooner or later. So will their armies if they come over fighting. Even Germany and Japan will get our ministration as soon as we knock them out. Cotton-textile lend-lease requirements are estimated by WPB officials at 900,000,000 to 1,500,000,000 yd. in 1943.

Frank L. Walton, who became director of the Textile, Clothing and Leather Division on Dec. 15, announced realignment of the present 14 commodity sections of the division. At the same time, Mr. Walton announced the appointment of Henry Giebel as deputy director of the division, effective Dec. 15, and named W. F. C. Ewing and Ralph Loper to the posts of assistant directors, effective immediately. The branches, and names of the chiefs are:

Cotton, T. M. Bancroft.
Wool, K. W. Marriner.
Synthetic Products, Harry L. Dalton.
Cordage, Arthur R. Howe.
Shoe & Leather, Harold Connett.
Clothing, G. R. MacDonald.
Knit Goods, J. S. Shireman.
Equipage, Hugh Boeddinghaus.
Dye & Finishing, G. H. Lanier, Jr.
Textile Machinery, R. S. Dempsey.

Announcement of the sections and units to be set up under these Branches to handle specific commodities will be made shortly. Mr. Giebel, deputy director, has been with WPB since last August. He was chief of the Equipage Section of the Textile, Clothing and Leather Division at the time of his appointment. Mr. Ewing, assistant director, is vice-president of the Alexander Smith & Sons Carpet Co., Yonkers, N. Y. He has been chief of the Floor Covering & Upholstery Section of the Textile Division since the initial organization of the Branch. Mr. Loper, assistant director, is president of the Ralph E. Loper Co., Fall River, Mass., textile cost accountants and industrial engineers. He was chief of the Conversion and Engineering Section.

As the amendment to M-73 says, WPB's main reason for increasing the quota of wool to the worsted system is that Army requirements have slacked off, and WPB wants to make sure that the worsted production plant is kept running, just in case it is wanted all of a sudden for some new demand here or for lend-lease. Another reason is that it would not be good war business to let too many people get very cold.

The stockpile of wool belonging to the Government is about 700,000,000 lb. This includes the 250,000,000 lb. which we stored up here for British account.

Addenda to Textile War Manual

PRICE CEILINGS AND AMENDMENTS BY OPA

Alpaca—WPB on Nov. 23, took steps to assure a supply of certain kinds of alpaca for manufacture of uniforms worn by troops stationed in cold climates and also by aircraft crews operating at high altitudes. In an amendment of Order M-73, WPB restricted the use of alpaca from certain territories to production of material for the armed forces. Previously, some of the specified types of alpaca had been available for manufacture of such things as clothing, upholstery fabrics, draperies, etc. Alpaca covered includes the following: No. 1 alpaca fleece from Arequipa, Callao or Tacna; No. 1 skin alpaca fleece from Arequipa; alpaca seconds or short fleece from Arequipa; Huarizo fleece from Arequipa; and llama fleece from Arequipa. The amendment requires all purchasers of the specified types of alpaca to certify in writing that the material is to be used only for the armed forces, the U. S. Maritime Commission, or the War Shipping Administration.

Chlorine—Restrictions on the use of chlorine and products containing available chlorine have been revised to remove from control of Conservation Order M-19 all products containing available chlorine such as liquid sodium hypochlorite, calcium hypochlorite, sodium chlorite and other similar products. Also exempted from the order, as amended, are deliveries and use of 2,000 tons of chlorine or less per month.

Coated Fabrics—Rapid concentration of the coated fabrics industry on military requirements must take place at once to fulfill definitely increasing requirements of the armed forces, members of the Oleo Resinous and Tower Oil Coating Industry Advisory Committee were told at a meeting on Nov. 18.

Coir—Several additions to and shifts in the lists of materials covered by the General Imports Order, M-63, became effective on Nov. 23 under the terms of Amendment 8, announced WPB on Nov. 20. Coir fiber, coir yarn, and coir manufacturers have been added to the List I (materials which may not be imported by persons other than Government agencies without special WPB authorization; imports may continue under existing contracts, but special authorization to process or move the commodities, once imported, must be secured). Certain cotton yarns and fabrics are added to List II of the order so as to control imports and to direct the fabrics to essential uses. Wools finer than 40s are transferred from List III to List II in order to provide for the importation of adequate amounts for blending with other wools. Several commodities are added to List III (specific authorization for permission to import must be obtained regardless of existing contracts). Textile commodities added are: shoddy and wool extracts; and wool rags.

PRIORITIES AND ALLOCATIONS—AMENDMENTS BY WPB

Broadcloth, Combed Cotton — Army procurement of combed cotton broadcloth for the Women's Auxiliary Army Corps and Army nurses' uniforms was facilitated Dec. 14 when OPA set a ceiling price for one invitation to bid. The price is 19¢ per yard for 37 in., 136x60, 4.00 to 4.20 yd. combed broadcloth when sold pursuant to Army Invitation No. 669-43 Philadelphia Negotiated 161. Any contracts taken at or below 19¢ per yard pursuant to this invitation "will not be cut across in subsequent price action," OPA said.

Cotton Gray Goods—Because producers of fine cotton gray goods are withholding goods from sale pending the issuance of new ceiling prices, OPA on Nov. 30 permitted sales and deliveries of 19 fabric types "on memorandum" subject to final settlement at the new prices to be announced shortly by OPA. This step was taken to avoid any delays in war procurement of any of these 19 types. Following are the types of fine cotton gray goods which may be sold and delivered on memorandum: broadcloth, lawns, dimities, dimity checks, piques, pongees, voiles, marquisettes, scrims, fine combed plains, organdies, tracing cloths, typewriter cloths, umbrella cloths, collar cloths, poplins, beat-up marquisettes, sateens, airplane cloths. Through Amendment No. 6 to RPS No. 11 (Fine Cotton Gray Goods) deliveries against contracts entered into after Dec. 1 and sales or contracts of sale made after such date of these enumerated types may be made without specifying any price if the parties agree that the buyer's obligation will be discharged at prices not in excess of maximum prices which will prevail on the effective date of the revision of Schedule 11. Schedule 11 will be revised and reissued as MPR 11. The new regulation will include all constructions of certain fabric types of fine cotton gray goods for which maximum prices are currently established not only by Schedule 11 and the GMPR but also Regulation 157 (Sales and Fabrication of Textiles, Apparel and Related Articles for Military Purposes).

Cotton, Rayon Piece Goods—Unnecessary handling and wasteful extra finishing of cotton and rayon piece goods—increasingly disturbing aspects of the "tight" civilian textile market—were arrested Nov. 25 by OPA. In order to halt such inflationary influences, OPA ordered that after Nov. 30, "gray goods" mills may sell to certain types of customers a no larger percentage of finished piece goods than they sold during the years 1939, 1940, and 1941. Amendment No. 9 to MPR No. 127 (Finished Piece Goods) also provides a new table of "division factors" for use in establishing maximum prices of some better cotton wash fabrics.

Cotton Seamless Bags—Specific maximum prices for cotton seamless bags, used extensively in the packaging of seed, are supplied Nov. 28 by OPA to replace "formula prices" for these containers as determined under the cotton products regulation. At the same time, OPA set "cents-per-yard" ceiling prices for sales by wholesalers and jobbers of gem ducks, an important shoe lining fabric. Maximums for sales other than by manufacturers are 22¢ for 8-oz. and 25¢ for 9-oz. gem ducks.

Cotton Yarns, Carded—Discount and premium provisions applicable to certain types of carded cotton yarns are supplied Dec. 2 by OPA through Amendment No. 1 to MPR No. 33 (Carded Cotton Yarns and the Process Thereof). Eight changes set forth in the amendment provide: (1.) A method of obtaining premiums for double-carded cotton yarns; (2.) Modification of the specifications of the cotton content of base-grade yarns to permit the use of cotton grading no lower than strict low middling white if the yarn produced is clean and uniform; (3.) Revision of discount provisions for yarns made of waste or low-grade cotton to provide for differences in material and manufacturing costs; (4.) Revision of information required in petitions for adjustment of prices for yarns composed of long-staple or high-grade cotton; (5.) Restriction of monthly report requirements to producers making "discount" yarns of low-grade cotton or cotton waste, or which are not clean and uniform; (6.) The addition of alternatives to the formula providing for deductions when a processor does not quill or wind yarn; (7.) Exemption of all yarns produced on Brownell and Haskall-Dawes type twisting machines; (8.) Clarification of instances in which premiums may be charged for sales of stock yarn by jobbers.

Cotton Yarns, Combed—In order to make possible initial importations of certain English combed cotton yarns for use in the manufacture of women's hosiery, OPA on Dec. 14 removed price restrictions on such shipments.

Knitted Underwear—In order to assist underwear manufacturers in complying with the reporting requirements under MPR No. 221, OPA said on Dec. 7 that manufacturers need file reports only for fall and winter knitted underwear on Dec. 15, and may defer filing information with OPA on all other styles until Jan. 15, 1943.

Rayon Yarn—With rayon yarn manufacturers about to enter into contracts for the sale of the new special rayon yarns to be used for automobile tire cord and parachute support lines, OPA on Dec. 11 announced uniform cents-per-pound ceiling prices for such yarns. These are "high tenacity" rayon yarns that have been developed as a substitute for yarns made from long-staple cotton in tire cords and for silk and Nylon cords in parachute shrouds (ropes). OPA authorizes a maximum price of 43¢ a lb. for sales of the yarn to be used chiefly in tire cords in the place of yarn made from long staple cotton. This is an 1100 denier viscose process high-tenacity continuous filament yarn. For the heavier yarn to be used for parachute shrouds, a 2200 denier yarn of the same high tenacity construction, a ceiling of 36¾¢ has been set. These prices apply to the yarn when sold on cones or beams.

Wool Tops—Wool top futures contracts entered into at prices in compliance with legal ceilings on the date the contract was made may be carried out regardless of later changes in maximum prices due to shifting rates for war risk insurance, OPA announced Dec. 8. The action under RPS No. 58 as amended (Wool and Wool Tops and Yarns) applies to maximum prices for wool top futures contracts traded in the Wool Associates of the New York Cotton Exchange. This ceiling is $1.40 a lb. increased or decreased on the date the contract was made by 1¢ a lb. for each 1% that the prevailing war risk insurance rate of the War Shipping Administration on wool imported from Australia to the east coast is above or below 7½%.

Work Clothing, Women's—WPB issued schedules III and IV to Order M-207, Nov. 21, assigning A2 ratings to converters, finishers and garment manufacturers for the purchase of cotton and rayon dress goods for women's work clothing for use while engaged in industrial or agricultural occupations, and also for hospital clothing. Schedule III grants A2 ratings for hospital clothing textiles such as patient's gowns and uniforms for nurses or hospital personnel. Schedule IV assigns A2 ratings for women's work clothing consisting of overalls, coveralls, work slacks, work shirts, work jackets, work dresses and work aprons when made of denims coverts, pinchecks, seersuckers, corduroy, broadcloth, poplins, print cloth, twills, etc. Garment manufacturers are limited to four models annually of work clothing. Inventories of work fabrics must not exceed a 90 days' supply.

Machinery Regulations Revised Again

STILL FURTHER tightening control over the use of steel for non-munitions purposes, the War Production Board has ordered that new and used machinery for the production of textiles, clothing, and leather goods can be produced and sold only with specific authorization issued by the Director General of Operations.

These classes of machinery previously had been covered by a general machinery order, L-83, but the provisions of L-83 that affected textile and leather machinery are revoked, and L-215 applies in its place.

The word "parts" in the order does not include parts purchased or delivered to maintain or repair machinery already installed in any producer's plant, but does include parts purchased for improving, adding to, or expanding such machinery. Mill operators are instructed simply to order parts for maintenance and repair of installed machinery without using any Government forms whatever.

Here is a brief summary of the provisions of Order L-215:

1. If you want to buy replacement or additional machinery for an existing plant make application to the DGO on Form PD-744.

2. If you want machinery for a new plant or project, make application to the DGO on form PD-200.

3. If you buy machinery on form PD-744, the DGO has power to tell you from whom you shall buy it, and he may do so.

4. Order L-215 does not apply to boilers, motors, cranes, etc. The War Production Board recently advised factory operators to try to get motors, blowers, etc. on the second-hand market; it said plenty are available.

5. Machinery manufacturers are required to file on or before Jan. 11, on Form PD-745, a complete production and sales schedule for 1943, covering industrial sewing, clothing and leather machinery.

6. Machinery manufacturers are required to file on or before the 15th day of each month on form PD-746, a similar report covering textile machinery. The first report is due Jan. 15.

7. The DGO can change your schedule at any time after you file it.

8. The following types of used machinery are exempted from the order: textile, in amounts of $500 or less; sewing machinery when sold (not leased) in amounts of $50 or less; clothing making machinery when sold (not leased) in amounts of $50 or less. Purchases in any month of the above types must not exceed the dollar amounts mentioned. Used machinery may be sold to dealers without authorization, but re-sale to mills is subject to L-215.

9. All of the forms above referred to are now available; you can get them from Textile Machinery Div., WPB, or from your local contracting officer.

Weaving OD Army Overcoatings

Experiences in two mills which led to higher loom efficiency and better fabric

By WILLIS G. HOLMAN

A FEW WEEKS AGO I visited Joe's mill. Joe is a very good friend and is superintendent of a fine mill. We had lots of fun discussing our various manufacturing problems. During our conversation I mentioned that our looms were averaging 80% efficiency on 32-oz. Army overcoatings. Joe could hardly believe this and told me his loom efficiency was only 60%. Naturally, I was anxious to check his methods, because I could not understand why there should be such a discrepancy between his results and those we were obtaining in our mill.

We immediately decided to take a trip through his plant. His looms seemed to be in good shape mechanically. They were practically new Crompton & Knowles W-3 automatic looms.

The mill's winding and warping equipment was also in good condition, and the yarns seemed to be spinning well and running well on the spoolers and on the dressing reel.

The condition of the weaving, however, was poor. Warp threads were tied at the back of the looms, and the weavers were having difficulty running their jobs.

We then returned to Joe's office, where I asked to see his mill drafts representing the cloth layout; I checked these carefully and could see nothing wrong. He was running more picks in his cloth than we were, but I could understand this condition, because when we first started on the cloth we made it with more picks than at present. His yarn size was identical with ours, so was his width in the loom, etc. I asked Joe what his yarn was testing. His reply was, "105 lb. for $7\frac{2}{3}$-cut yarn."

For a minute I was stumped. Then I asked Joe if he had recently checked his draft.

He looked at me in amazement and said, "What do you mean?"

I replied, "How recently have you checked each detail shown on your layout to see if in actual manufacture they are running true to form."

Joe gave me one of those "crocodile smiles," for which he is famous, and answered that he hadn't checked his draft and didn't think it was necessary.

Well, I was completely at a loss and asked for the privilege, even though it might seem unnecessary, of checking each mill detail with Joe.

THE PROBLEM was principally one of weaving. His cloth, once woven and finished, was acceptable, but his weaving cost was tremendously high, and his production extremely low. I remembered from the draft that he showed a 22-in. stretch in his yarn. However, his yarn seemed very caky and did not have much elasticity. Accordingly, we walked up to the roving weigher in the card room and asked him what weight roving he was making. His reply completely dumbfounded Joe, and I could see Joe was a little upset, because his carder, at the request of some hard-boiled mule spinners, had arbitrarily reduced the roving weight, thinking it would improve the spinning. This change had decreased the elasticity in the yarn.

We then went to the spinning room and found the second hand who was weighing yarn and checking weights. First, we found that the yarns were actually sizing $6\frac{3}{4}$ and 7 cut rather than $7\frac{2}{3}$ cut, as shown on the draft. Joe was again amazed at this discovery. However, the boss spinner simply stated he was encountering a little difficulty in meeting his breaking strengths, and, rather than doff yarn under standard, he was spinning the yarn a little on the heavy side.

Joe is an excellent mill superintendent, but has had little experience in designing. He didn't realize that the cloth compression of the 32-oz. overcoating, as required by Government specifications, already was as tight as is possible for good weaving. In other words, the warp is 17.8% over the maximum; and the filling, with 31 picks, is 1.9% under the maximum, based on a 3/3 weave. Now when Joe's spinner took it upon himself to spin the yarn on the heavy side, he didn't realize that the warp compression was being increased from 17.8% to 24.2%, and the filling was being increased from 1.9% under maximum to 9% above maximum. In other words, the heavier the yarn, the tighter is the cloth.

Joe wasn't convinced, so I decided to stay at his plant for several days while we made a special lot. This lot differed from the others in three respects. (1) We increased the stretch between roving weight and yarn weight from 22 in. to 27 in.; hence, a more elastic and smoother yarn was produced. (2) We spun the yarn on the light side of $7\frac{2}{3}$-cut, actually 150 grains. (3) We reduced the twist from 8 turns to 7 turns.

We then had the time-study man check the weaving. One loom was operating at 85% efficiency. This efficiency was better than we were attaining at our own plant. Since leaving Joe's mill, I have received several letters from him, stating that he is averaging about 80% efficiency, which is as good as ours.

IN OUR MILL we first wove this 32-oz. overcoating with 31 picks. Soon, however, we reduced our construction to 27 picks, which naturally increased our loom production and, at the same time, tended to loosen our cloth. To make this reduction in loom pickage, it was necessary to put in an additional amount of head shrinkage when fulling the cloth to compensate for the reduced weight of the cloth from the loom.

Additional head shrinkage is also necessary to bring the filling thread count to specification.

On the other hand, when we reduced the picks, we not only effected an economy by obtaining better loom efficiency and greater production, but also improved the cloth value, because the extra head shrinkage gave us better felting and a generally better handling cloth.

The first few pieces that we fulled with this extra shrinkage by having less picks came to the finished perch with wrinkles. This was easily corrected by increasing the body of our soap. We had been using an 8-oz. soap made up of 8 oz. of palm oil soap and 2 oz. of soda ash.

We changed this to 10 oz. of soap and increased the soda ash 1%, thereby eliminating the wrinkles.

Opener and Picker Maintenance

Cleaning, inspecting, lubricating, and overhauling under wartime conditions

OPENING AND PICKING MACHINES are running two and three shifts to meet increased production requirements. Therefore unless maintenance practices followed for one-shift operation are revised, serious damage can develop. Cleaning of opening and picker room machinery is the first step in proper maintenance. Routine cleaning practices are the following: Mop off outside of machines and remove all chokes from aprons, rollers, shafts, feed rollers, gears, and calender rolls once a shift. Clean waste boxes once a shift, or more often if amount of dirt and waste collected requires it. Remove dirt from all oil holes with a pick before using an oil can, and wipe off pressure fittings before using a pressure gun so dirt or grit will not be forced into the bearings. Pick out gummy deposits of seed, dirt, and lint from heavy-duty gears on feed rolls and calender rolls every six weeks. Clean and polish all cages in screen sections and condensers. Keep all feed and exhaust passages free from chokes or accumulated waste, dust, and lint. Clean dust rooms at least once a week.

Use lubricants of the highest quality, as inferior grades can offset all the careful maintenance work done on a machine. On anti-friction bearings that require greasing with a high-pressure grease gun, avoid use of excessive pressure, as an over-supply of lubricant, packed tightly into the bearings, will cause them to run hot. Remove the covers of anti-friction bearings that do not have provision for adding a lubricant, and wash bearings and housings in a solvent to remove grease. Reassemble and work new grease into the bearings. Anti-friction bearings require filling with new grease of a stable non-caking soft soda type every one to six months as advised by lubrication engineer.

Plain bush-type bearings require greasing daily or weekly as recommended. Introduce grease into the bearing with a high-pressure gun with a sufficient number of shots from the gun to force the old grease to appear at the end of the bearing. Use a good grade of lime-soap cup grease of medium consistency.

Anti-friction bearings and plain bearings that use oil require oiling at least once a day—sparingly. Use a squirt-can with a good grade of oil.

Gears, studs, and pinions, chains, and linkages should be cleaned and greased every six months or more often if wear is noted. More frequent lubrication is necessary if a lubricating oil is used.

Systematic inspection and overhauling should be carried out at least twice a year. At the time of the inspection and overhauling, check each machine in the opener and picker room and repair or adjust as outlined in the accompanying table.

Overhauling and Adjusting Cotton Opener and Picker Room Equipment

Bale breakers and feeders—Adjust aprons so they will carry the load without excessive tension. Replace broken apron slats and straighten spikes on elevating apron. Straighten and replace bent or broken pins on the pin cylinder. Renew leather on auxiliary doffer if worn or not pliable. Check mechanical and electrical control and signal systems.

Buckley cleaners—Examine and repair damaged fluted feed rolls and gears. Resharpen or replace dull beater steel fingers and keen angle dust bars. Adjust feed of delivery apron tension and repair broken slats.

Cleaning trunks and feed tables—Examine and repair apron guides and rollers. Line and level cleaning trunks and feed tables. Check aprons for tension without binding or stretching.

Vertical opener—Examine and sharpen or replace worn beater blades. Replace badly worn or knicked grid bars. Check drive belt tension to see that it is not causing bearing or belt to wear excessively. Set beater and grid bars for the proper cleaning of stock.

Lattice opener—Inspect fluted feed rolls and feed roll gears for damage and wear. Replace worn or dull beater picks or reverse beater cylinder. Keep dust bars free from knicks or burs. Replace bars that cannot be reworked.

Screen sections—Examine delivery rolls and screens to see that they are free from knicks and dents. Test fan shaft for sideplay so fan will not strike housing and break. Replace broken apron slats and regulate tension so aprons can carry cotton without slipping. Repair holes in screen to prevent loss of cotton. Replace chilled iron bowls and studs at ends of screen that show excessive wear, or good fiber can be lost. Replace damaged leather screen seals.

Overhead condenser—Keep screen clean and polished. Repair holes in screen. Replace chilled iron bowls and studs at ends of screen that show excessive wear. Check side play on fan shaft to prevent damage to fan. Inspect leather seal at ends of screens for leakage.

Automatic feed control System—Clean bevel gear drive periodically and flush out grit. Keep conveyor apron at the proper tension.

Beater and apron Sections—Keep edges of blade beaters sharp. Replace damaged carding beater lags or points. Straighten damaged points. Check condition of feed rolls, feed roll gears, and springs. Check fan for balance and fan shaft for sideplay to prevent damage to fan. Line and level beater shafts. Replace badly knicked or damaged grid bars. Test beater safety lock to prevent accidents.

Cone box and evener motions—Replace worn cone belts. Adjust turn-buckles and linkages to center belt on pulleys as nearly as possible.

Blending reserve—Check conditions of feed rolls, feed roll gears, and springs. Keep elevating and feed aprons at the proper tension without stretching. Inspect grid bars to see they are not bent, crooked, or displaced. Avoid adjustment of doffer-beater-to-feed-roll setting, as this should be done only by the manufacturer. Balance and adjust the regulating rake inside reserve chamber.

Calender head—Keep leather or friction wheel clean and free from oil and grease, and in a soft, pliable condition. Replace unsuitable leather using care to countersink copper rivets. Regulate tension on lap pin so as to form a lap without damage to lap-head blocks and rollers and lap pin gudgeons. Smooth badly knicked calender rolls and lap pins and adjust sliding weight so pressure on calender rolls forms loose sheet of cotton without felting fibers.

Simplification Program Under Way

May involve cut in number of lines, making of "Victory" cloths, or both

SOME METHOD of simplification and standardization of textile fabrics and garments will shortly become obligatory—so gossip goes in Washington. With Mr. Henderson and Justice Byrnes both strongly feeling the necessity of some effective program, it is just a matter of time.

What effect will a simplification program have on mills and converters? What are the prospects for a Post-War continuance of an effective program? Who will initiate and enforce the effort?

For some years certain consumer-interested groups and zealous individuals have preached the gospel of simplification and standardization. The theory behind the preaching seemed to be a desire to prevent consumer-gypping in quality and performance of fabrics and garments. It looks now as though these people will have to sit by and watch a stricter program than even they had thought out.

The present move derives from necessity—not reformation. Why the compelling need for immediate action? The reason is found in the tremendous needs of the Armed Forces and the Lend-Lease program. This pressure has had three major results: first, limiting quantity and types of available raw materials; second, limiting equipment available for civilian goods; and third, drawing heavily on skilled labor.

When materials and labor are scarce and likely to be scarcer, there is need that all resources be applied in such a way as to benefit the greatest number of people in the most efficient manner.

Two lines of thought are being expressed regarding the method of supplying the consumer public. One is to discard fancy constructions and concentrate on a few lines in each commodity bracket. The second is to build a line of Victory cloths, to specification, and garments to standard measurements. Either one will, it is thought, result in greater mill efficiency by cutting out short runs, fancy lines and intricate color combinations and finishing techniques. Even though this effort does limit the number of types and styles for Mr. and Mrs. Consumer, either course may provide an excellent grade of fabrics for consumer-wear.

The commodities that probably will claim first attention are, logically, those produced in volume and serve the greatest number of consumers, for instance, blankets, shirts (both business and work types), wash dresses, knit underwear, towels.

WHEN WILL a simplification program start? Already plans are under way. It has to be done, therefore it will be done, so definite is the feeling in Washington. Seeing the hand-writing on the wall, one manufacturer of a very necessary commodity recently expressed some such thought: "Hell! if it's got to be done, why don't we fellows get together to do it? We know the business, and why not?" And the echo in Washington is, why not? It is felt that the sooner a practical simplification plan is mapped and put in working order, the sooner will all needs be met squarely, efficiently and practically.

Many initial steps have been taken, but there is no textile simplification program, as such, under way as this is written. The Textile Branch of OPA's Standards Division is making studies and proposals. But when and in what form they will be carried out is not yet known. This will be up to the policy makers of the war production agencies. The Standards Division has turned a favorable eye on the British simplification and standards system as a possible pattern for this country.

In a way, price control is the spindle on which the beginning of a simplification program already turns. If, for example, the Government sets a range of dollars and cents values on a class of goods, the manufacturers automatically begin to produce the best products they can under those ceilings.

For example, OPA has already promulgated an order (PR No. 89) setting four price levels on sheetings, and its executives say that producers will tend to make one quality and construction of sheeting under each of these four levels. When goods are scarce, and consumers are inclined to take what they can get within reason, manufacturers will simplify anyway, for the sake of profit, regardless of what the Government may do. A similar order was in preparation on hosiery as this was written, with each of four grade groups broken down into A and B quality. There will be more such orders.

At present, WPB, OPA and the Office of Civilian Supply all have their oars in the water. The best guess is that a simplification program will just grow, more or less like Topsy, and that all of these agencies will have a hand in it. When you note the functions of WPB, OPA, and OCS you see at once how they must overlap and interlock in any textile simplification program: WPB tells industry how much material it can have, and what and how much of products it can make; OPA, in general, sets prices and specifies standards under those prices; OCS tries to conserve, and make most effective use of what goods remain, after the Services get theirs, in the interest of civilian consumers.

Just as you probably cannot have a single one of the present war agencies in charge of textile simplification, so you cannot have simplification alone. You can simplify, by reducing the number of constructions or types of goods, but it would do no good unless you also set up standards. If goods are made too poorly, their service life will be so short that the cotton and the machines and the labor and the transportation put into them will be partially wasted. Likewise, you can make high quality, luxury, broadcloths which will not sufficiently outwear standard qualities of shirtings, for example, to justify the extra time and labor and quality cotton required. And of course you cannot have either simplification or standardization without price control. Both would get out of hand immediately.

AS FOR POST-WAR possibilities in this situation. There are many who support the theory that this country will continue for some time, even years, to feed, clothe and otherwise help the peoples of the world back on their collective feet. Until the post-war reconstruction period is finished there will have to be a lot of outpouring of material help from us. Therefore, whatever wartime-emergency measures are taken at this time for the greatest good of the greatest number of people, will continue until their service is complete. How long will it take? Longer than we think, perhaps.

Knit Goods for Military Purposes

Cotton and wool socks, wool hose-tops and wool V-neck sweaters bought by QM

SOCKS FOR THE ARMY. 22,500,000 pair is the number recently requested in an informal bid calling for light, cotton and wool socks to conform to the requirements of Federal Specification JJ-S-581a. Class A, Type I socks are desired with the exceptions set forth in the bid. Although F. S. JJ-S-581a specification is intended to apply to socks procured by the Army, Navy, Marines, and Coast Guard, only that material pertinent to Neg. 62 will be covered.

Yarn—The blend shall be silver gray and composed of wool, not lower in grade than 64s, and of cotton. The finished sock shall be so proportioned that exclusive of the heel and toe the blend shall analyze not less than 50% wool. Carded yarns are specified; the cotton and wool shall be thoroughly blended and evenly spun into a single yarn on the cotton system. The color of the socks is obtained by mixing 3 to 5% natural black or fast-dyed black wool with the white wool and cotton. Reinforcing yarn is of 30s cotton. [It has been suggested that a body yarn of approximately 8s yarn will meet the requirements.]

Construction—The socks may be knitted on a circular machine 3½ to 3¾ in. in diameter. Minimum number of needles have been specified in the bid as 156 and 25 courses per in. are required. Table I lists the weight per dozen socks and the length for different sizes. The leg, heel and rib top shall be knit with two ends of yarn and the leg, heel and toe shall be plain-knit.

If a turned welt is used, the turned edge shall be no less elastic than the remainder of the ribbed portion of the cuff. The welt is a 1 x 1 rib and 5½ in. long, plus or minus ¼ in. Transfer is loop for loop without seaming or sewing so as to permit expansion to the full width of the fabric.

A full sized heel and toe is made using one-half the total number of needles. The gore of the heel and toe shall be knitted with not less than 24 needles on each side. A half inch advanced or ring splicing shall be incorporated in the toe of the sock.

Finish—The socks shall be thoroughly scoured to remove oils and grease and then boarded on drying forms to the proper size and shape. A tolerance of ½ in. is permitted in the foot length as well as a ½ in. tolerance for the length of the leg. Elasticity in the finished sock shall be such that stretched with a slight amount of tension it may be stretched at a point midway between the toe and the heel of not less than 6 in. for size 10½ and under, and not less than 6½ in. for sizes which are larger than 10½.

HOSE-TOPS. War aid fabrics in the form of hose-tops, olive drab, are requested in bids to be produced in accordance with specification PQD 253A.

Yarn—Hose-tops shall be knitted of yarn composed of 50% wool not lower in grade than 44s, and 50% wool not lower in grade than 50s, either fleece or pulled wool. The wool shall be well carded, combed, spun and twisted into two ply worsted yarn. [It has been suggested that a yarn approximately 10s two-ply will comply with the specification.]

All domestic, combination of 50% domestic and 50% foreign wool or all foreign wool will be acceptable. Yarn shall be OD produced with chrome dyes that show good fastness to laundering, perspiration, crocking and to weather.

Construction—The hose-tops shall be of a 1 x 1 rib stitch knitted on a circular machine of not less than 84 needles and not more than 108 needles, and a cylinder of not less than 4 in. in diameter. Not less than two ends of two ply worsted yarn may be used. The upper ends of the hose-top shall have a French or tuck welt so the top will not ravel. The bottom should be finished with a stitch type 504 or 505 or equal using three ends of worsted yarn, or the bottoms may be finished with a machine crochet finish. However, there must be enough elasticity to permit the hose-tops to be pulled on easily.

The finished hose-top shall measure 19 in. long with tolerance of 1 in. plus or minus and shall have enough elasticity to stretch 8 in. at the welt and be 3 in. wide with tolerance of ¼ in. plus or minus when measured in the middle of the leg. The hose-tops shall weigh not less than 3 lb. per doz. pair. They should be well steamed and calendered or steam pressed.

SWEATERS, wool, V-neck, OD as covered in PQD 251-B, are being procured by the Philadelphia QM for war aid purposes.

Yarn—Knitting yarn shall be of fleece or pulled wool of not lower than 50s grade. It shall be carded, combed, spun and twisted into two-ply worsted yarn and the yarn dyed an approved shade of olive drab with chrome dyes.

Knitting—The V-neck, pullover sweaters with sleeves may be of either of two classes. Construction for class A specified not less than 7 wales and 10 courses per inch and class B requires not less than 10 wales and 12 courses per inch. Much essential knitting data covering these sweaters is given in Table II.

TABLE I.

Socks, wool and cotton mixture

Sizes	Weight Oz. per Doz.	Leg length, In.
9	21¾	14
9½	22¼	14
10	22¾	14
10½	24	14½
11	24½	14½
11½	25	14½
12	25½	14½
12½	26	14½
13	26½	14½

TABLE II.

Sweater, wool, V-neck

Section	Type Stitch	Min. No. Feeds	Wales Min. No.	Courses Min. No.	Finished Size	
					Lg., in.	Width, in.
Skirt	2 x 2	2	..	14	..	2½
Cuffs	2 x 2	2	..	14	4½	3½
Collarette	1 x 1	2	7	14	..	1½
Body, class A	.....	2	7	10	..	...
Body, class B	....	2	10	12	..	...
Arm reinforcing	1 x 1	2	10	12	3½	¾

New Phase in British Concentration

Government dictates details, provides profit-sharing, and bans brand names

By A. WYN WILLIAMS

GREAT BRITAIN has now experimented for nearly two years with a revolutionary war-time plan for concentrating industry by Government fiat. However, the latest modifications in the British methods of enforcing the plan, which have been introduced as a result of lessons learned in 1941, are not such as to give comfort to the American business man, if America follows even the latest British policies in concentration. A few refinements have been added to the means by which an ever larger number of businesses—chiefly of the smaller kind —are removed from the scene, but the probable end is the same: ultimate extermination for the firm arbitrarily closed.

The Government now seems to recognize this and no longer gives an assurance, as it did in 1941, that the firm closed will have a glorious resurrection after the war.

Apart from not keeping up the pretense that they will reopen, another innovation in the 1942 pattern of industrial concentration is that the Government is no longer claiming that closed firms will have their peace-time interests and identities preserved. In 1941, firms which were not given a "nucleus" status were strongly recommended by the Government to enter into arrangements with firms remaining in business to manufacture their products at cost, so that the closed firm could still keep its brand names and identity before the public. In 1942, concentration of industry has developed a stage further into concentration of products. To make this latter policy effective, the Government not only does not encourage closed firms to keep their brand names before the public, but in many instances forbids the use of them.

Thus, in June 1942, the soft-drink industry was concentrated and the Government specifically prohibited, for the duration of the war, the use on any bottle of a label bearing a manufacturer's name, or a trade-mark or a brand. Similarly the policy introduced in 1942 of manufacturing utility goods, whether cloth, clothing, furniture, or a dozen other products, puts into cold storage brand names which have been house-hold words for generations. It is difficult to believe that these trade names can come out of storage after the war with their vigor unimpaired. This 1942 attitude of the British Government toward branded goods is a direct reversal of its avowed policy when concentration was started in March 1941.

THIS YEAR there is also a weakening of the Government's emphasis on an industry taking the lead in forming schemes of concentration. There was of course little substance in 1941 in the invitation to an industry to submit proposals for its own streamlining. The bureaucrats, for example, refused to listen to the cotton industry which was against the form of concentration finally imposed upon it. (Later events were to prove the businessmen of Lancashire correct and the bureaucrats wrong.) Similarly, the advice of the hosiery and pottery trades was cavalierly disregarded. But, although in 1941 the Government paid little heed to the recommendations of an industry on the general form of its concentration, it did permit it to have a voice in its details, and firms could settle among themselves which were to be nucleus and which were to close.

This year the Government has tended more and more to dictate the details for the concentration of an industry. The case of the soft drink industry, in which the Government ordered more than 200 factories closed, with the ones remaining in business turning out only standardized products without firm or brand name, has already been mentioned. Similarly when the clothing industry was concentrated in the summer, the Government itself designated which were to be the 2,000 firms, out of 25,000, to make utility clothing. The Government, rather than the industry, has also nominated the nucleus firms in several other cases, such as in cutlery, paper, box and carton, paint, etc.

The question of compensation which proved a stumbling block in 1941 has not made much progress towards a satisfactory settlement in 1942. There has however been a distinct tendency for the Government to bring pressure on an industry as a whole to make arrangements for the sharing of profits, in which closed firms would participate.

Opinion in Great Britain is veering to the belief that a scheme of general compensation, provided by the Government, should have been established for the benefit of closed firms when the scheme of concentration was first launched. The necessity for certain industries to be "re-concentrated" because of the Government's decision to limit production still further, has upset several elaborate schemes set up in 1941 for the establishment of central funds for the benefit of closed firms. The dwindling profits of "re-concentrated" firms made the schemes unworkable.

IN ONE RESPECT concentration in 1942 has been more effective than in 1941. In the former year, there was no coercive power to force surplus labor, released by a scheme of concentration, into war work. A large proportion therefore disappeared altogether, or entered other non-essential industries. By the Second National Service Act of December, 1941, the Minister of Labor is now empowered to direct all males up to 50 and all single females up to 45 into any essential service for which their labor may be required. This disposes of the wastage that occurred when the cotton industry was concentrated in April 1941, when a fifth of the surplus female labor disappeared altogether. All persons of working age are now registered and the Minister of Labor can immediately put his finger on them as they become available for transfer to war industries.

England's concentration has traveled far from its early beginnings when the Government began restricting supplies for the manufacture of civilian goods. Control is now complete, not only as regards the supply of raw materials, but also the quantity and character of product that can be manufactured, building space that can be used, the financial policies of firms permitted to remain in business, and the movement of any worker in any industry. To enforce this drastic form of complete concentration of industry, the Government has been granted unlimited powers over persons and property without which concentration would be little more than a pious hope.

Air Conditioning for Worker Comfort

Engineers discuss evaporative cooling; hear talk on textile research for war

THE ROLE OF EVAPORATIVE COOLING systems in overcoming unbearable temperatures in mills was described by M. H. Irons, of American Moistening Co., at the annual meeting of the Textile Division of the American Society of Mechanical Engineers, held Dec. 2, in New York. How textile research is aiding the war effort was outlined by Fessenden S. Blanchard, president of Textile Research Institute, in a summary of his report presented at the annual meeting of the Institute (TEXTILE WORLD, December, 1942, page 66). Discussion of high-temperature drying and curing of textiles with the aid of gas-fired radiant-heat burners—another feature of the meeting—is covered in an article on page 60 of this issue. An abstract of Mr. Iron's paper, "Evaporative Cooling Primer for Textile Management," follows:

Demands for high production in textile mills have resulted in higher machinery speeds, with consequently greater installed horsepower and generated internal frictional heat. The resulting unbearable room temperatures have brought textile management to place more stress on the evaporative-cooling effect of humidifying systems. Four types of evaporative cooling systems are: (1) direct systems, (2) indirect systems, (3) combination systems, and (4) unit systems.

Direct Systems. A direct evaporative-cooling system is one which evaporates moisture directly within an enclosure which is not airtight. Under this heading should be placed all so-called "humidifying" systems which utilize the following:

1. High-duty humidifiers consisting of a pressure-type water spray within a suspended cylinder through which passes a forced air flow or an induced air flow.

2. Atomizers which by means of a compressed-air nozzle induce a water flow into an air jet where it is broken up into a fine mist and distributed in the room.

3. Centrifugal humidifiers, incorporating a high-speed disk to which water flows into an air jet where it is broken up into a fine mist and distributed in the room proper.

4. Systems using short ducts with many outlets delivering a fine mist.

5. Open pans, air blown over wetted wicking, direct introduction of steam.

These systems are not graced by the term "evaporative-cooling system" where there is no controlled fresh-air flow. To make these systems evaporative-cooling systems, it is necessary only to introduce fresh air by means of an air-handling system, such as a duct distributing system or unit ventilators positioned at the windows, and then to incorporate control of that air-handling system. In the case of Type 4 suitable fresh-air and recirculation dampers under control need only to be installed.

Indirect Systems. This is the familiar air washer or central system in which fresh air, room air, or a mixture is passed through a series of sprays. The air emerges from the last spray saturated and at approximately the wet-bulb temperature of the entering air when the spray water is recirculated and unheated or cooled. This air at 100% r.h. is then distributed to the room through a system of distributing ducts and outlets.

Combination Systems. Duct distributing systems, combining washing or "indirect" evaporation, as well as "direct" evaporation within the room, make up a third category of systems.

Unit Systems. Units automatically supplying fresh or recirculated air or a mixture, as well as humidifying, heating, or filtering, may combine one or all of these functions under control.

The outside wet-bulb temperature is a measure of the total heat content of air and is the theoretical minimum temperature that can be reached by evaporative cooling with direct systems. However, in a weave room, for example, there would be internal heat to be picked up by the "air change," and a reasonably designed system might, under given outside conditions, be able to produce actually an 87° dry-bulb temperature, rather than the 83.8° dry-bulb temperature theoretically possible by saturating the air to 80% r.h.

THE PRIME FACTOR in figuring the size of the equipment required for an actual job is the total internal heat load. There are three types of heat gains making up this total.

1. Generated: Motors (this includes frictional heat given off by the driven frames, looms, etc.); lights; people.

2. Heat gain by conduction through walls, floors, ceilings, glass, etc.

3. Solar-heat gains such as direct sun on roof, walls, or glass.

If the management can reduce any of these factors, the size of equipment and the price of the job are automatically lowered.

After the heat gains have been totaled, we are ready to design a system to cool them. The particular locality involved may call for designing against an outside condition of 96° dry-bulb temperature; 75° wet-bulb temperature; 38% r.h.; 66° dew-point temperature; 37.81 B.t.u. per lb. of air total heat; 96 grains of moisture per lb. of air.

It is decided under these conditions to maintain within the room 83° dry-bulb temperature; 77.9° wet-bulb temperature; 80% r.h.; 76° dew-point temperature; 40.54 B.t.u. total heat; 136 grains of moisture per lb. of air.

Fresh air introduced will pick up 2.73 B.t.u. per lb. and dividing this into the total heat load will give the pounds of air per hour required.

Instead of giving the inside and outside conditions mentioned, the specifications might read "system to maintain 8° above outside wet-bulb temperature." Although this "8° above" designation does not hold exactly for all conditions, it is reasonably accurate for approximating performance at all outside wet-bulb conditions.

Many existing "direct" humidifying systems can be more fully utilized for evaporative cooling by:

1. Installing controlled fresh-air supply by means of unit ventilators or duct systems, which may or may not involve increasing evaporative capacity of the existing humidifying system.

2. Increasing present evaporative capacity to allow full use of "natural ventilation" in buildings where ventilation is normally of a high order.

3. Checking present humidity controls to see that the proper relative humidity is being maintained.

Fig. 1. Gay colored prints of this type may be seen in highly-styled printed goods which tie-in with the present Government policy of solidarity of the Americas. Characters shown in the prints are those appearing in Walt Disney's new picture entitled "Saludos Amigos." Patterns from M. Lowenstein & Sons Corp.

Cotton Fabric Styles for 1943

Work-clothing fabrics assured by M-207; Pan-American prints newly introduced

By HAROLD E. REED,
Assistant Editor, Textile World

WPB GENERAL PREFERENCE ORDER M-207 will be the "bible" for cotton gray goods producers and converters alike for 1943, at least until it is superseded. In this day of orders, and countermands, whatever may be predicted for the coming season may be changed overnight. Emphasis will be placed on practical fabrics for war workers, especially for women working in war plants and in agriculture. Regardless of restrictions in the types of fabrics given A2 priority ratings by M-207, style will still be a dominating factor in the sale of work clothing.

All fabrics available for the 1943 season will not, however, be fabrics intended only for defense workers, but numerous other lines will permit civilians to replenish their supplies. For example, prints will be available for the housewives, but not in so wide a selection as formerly. Simplification in gray goods will not be apparent to the public, although not so many constructions will be offered. Combed yarn fabrics will undoubtedly be scarcer, and by the end of the season will not be available to the general public if the present military demands for combed yarns are expanded.

Cotton mills have been reluctant to accept orders for goods, as military orders bearing high priority ratings have been available. High priority ratings have enabled these mills to obtain the necessary equipment to permit them to operate. Now, with M-207 and its A2 rating, mills are taking orders for work-wear cloth where they have the capacity available.

Cotton goods, as far as the civilian is concerned, may be divided into two definite classes: (1) the usual types of dress-goods, household fabrics, etc., and (2) clothing fabrics for war workers.

Fabrics for war workers cover a broad category that has recently been developed. Uniforms for air-raid wardens and other civil defense workers are usually made of cotton or of blends of cotton and rayon. Women taking an ever-increasing part in industry have created a demand for suitable work cloths. And, these cloths must be made of attractive materials and well styled. Slacks, and slack suits, culotte jumpers, overalls, coveralls, and practical dresses and aprons are typical of the garments that will be in demand during 1943, and the materials going into most of these garments will be covered with an A2 rating.

CIVILIAN FABRICS — Housewives will still find, in limited quantities, the usual run of fabrics to which they are accustomed. However, the market will be very tight. Ginghams, plaids, chambrays, piques, glazed chintz, and printed fabrics will be available. Such fabrics as seersuckers and corduroy, of which the Army has made large purchases, will be available in limited quantities to civilians. Most fabrics of

combed yarn will be replaced by carded yarns.

Print cloth and sheetings are difficult to obtain for non-priority use. Recently the Army ordered amounts equal to the capacity of the industry, for the next several months and also absorbed most of its manufactured stock. For the consumer is left only those sheetings held in stock by distibutors. It is doubtful if mills will be manufacturing sheetings for ordinary civilian use until about the middle of 1943. Print cloth has been ordered in large quantities by the Army for use in coated fabrics. Civilian print goods will be available in limited quantities. Plain, pastel shades will be popular. Dye restrictions, in many instances, account for the use of these light, pastel shades.

Several lines of highly-styled prints will be offered, and in some instances these designs will conform with Governmental action toward solidarity of the Americas. An excellent example of such cooperation is shown in the new resort and spring season line being introduced by M. Lowenstein & Sons, Inc. Timed with the premier of "Saludos Amigos," the South American picture made by Walt Disney and starring Donald Duck, will be a nation-wide announcement of a series of prints featuring the characters of this picture against a South American background. Colors will be typical of Latin America, featuring bold but warm shades of reds, greens, purples, etc. A number of these prints are illustrated in Fig. 1. Their strongest colors may offer a welcome relief from light, pastel shades and from fabrics and garments of military style.

Tweed, 100% cotton, is one of the few fabrics that may be considered as a relatively new development. Several houses are featuring such tweeds. An excellent example of this type of fabric, illustrated in Fig. 2, was produced by Marvlo Fabrics, Inc. These tweeds are design to appear like woolens. Woven on a wide loom, this fabric permits the tailor to handle the fabric and tailor the garment in the same way as with high-quality woolens. Soft-twist, colored yarns produce a tweed effect.

Cotton household fabrics are limited, especially in the drapery and upholstery fields. However, advancements have been made in popularizing cotton rugs. Cotton will undoubtedly find increased uses in cotton rugs of the hooked types and of the tuffed and string varieties.

FABRICS FOR WAR WORKERS — A large market will undoubtedly develop in 1943 as women take over the duties of men in industrial plants and on farms. Fabrics covered in M-207 suitable for women's wear include light-weight denims, coverts, pin checks, frock cloth, seersuckers, corduroy, suitings of cotton or blends of cotton and rayon, broadcloth, poplins, jeans, and twills. These fabrics have, in reality, been standardized, as the cloth constructions given in the accompanying table have been established for these fabrics by WPB.

Fabric constructions listed above for war work clothing will also find their way into clothing for the average civilian. However, when these types of fabrics are used for other than work clothing, the rating A2 does not apply; hence, their use will undoubtedly be limited.

Rayon and cotton blends will find many interesting uses; as during 1942. Blends will be popular in sports clothing, such as slacks, slack suits, skirts, etc. Also, gabardines, either of all-cotton or of cotton and rayon blends, are popular for coveralls and like work-wear.

Examples of twill fabrics which will be popular for work clothing and for sports wear are shown in Fig. 3. These fabrics, in most instances, are plain twill weaves and are dyed in solid shades.

Shirting materials will consist of broadcloth, poplin, etc. Some of the fabrics will be blends of cotton and rayon. Colored fabrics will range from plain pastel shades to plaids or other designs that are printed or produced in dyeing by using rayon and cotton mixtures.

Issuance of M-207 has, in reality, assured war workers of a constant supply of work clothes and has alleviated what might have been a shortage in fabrics of this type.

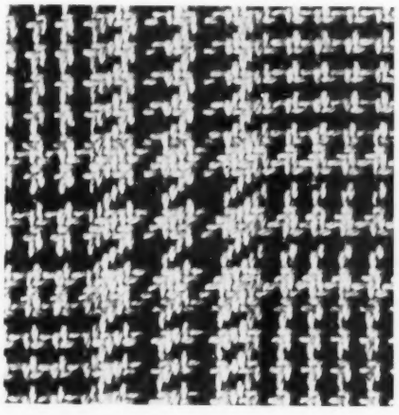


Fig. 2. Tweeds of 100% cotton as featured for sports wear. Soft-twist, dyed yarns, with a finished construction of 25 ends and 25 picks gives the appearance of a woolen fabric.

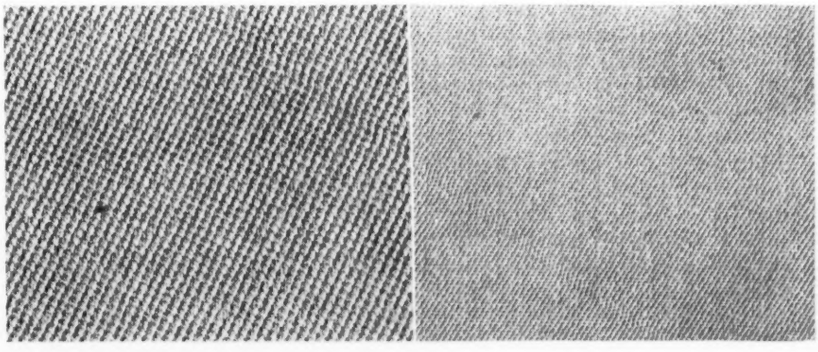


Fig. 3. Examples of slack and suiting fabrics are illustrated by these twills. Many similar fabrics are used for defense worker's clothing.

Women's Work Clothing Fabrics Covered by M-207

Fabric	*Width, In.*	*Yd. per lb.*
Denims, (white back)	28–29	2.00
Denims, (white back and stripes)	28–29	2.20
Denims, (white back)	28–29	2.45
Denims, (white back)	28–29	3.00
Denims, light weight	35–36	2.50–3.00
Coverts	35–36	2.70–3.90
Pinchecks	38–40	2.40–2.90
Frock cloth	36–39	2.00–2.35
Seersuckers	36–40	2.90–4.20
Corduroy, 13 to 16 wales per in.	36	7–8½ oz. *
10 to 12 ribs per in.	36	10-11½ oz. *
Suitings	35–36	2.00–3.40
Print cloths (80 x 80)	39	4.00
Print cloths (64 x 60)	39	4.25
Print cloths (68 x 72)	39	4.75
Print cloths (64 x 60)	38½	5.35
Broadcloths	36–37	3.60–4.20
Poplins	37–39	2.50–3.90
Jeans (94 x 64)	38	2.85
Twills	37–42	1.75–3.35

*Finished weight

Methods of Handling Rayon Cakes

Use of cake-holder assembly of proper design is essential to good results

By L. M. DINSMORE,
Sales Development Dept.,
American Viscose Corp.

RAYON IN CAKE FORM was introduced to the trade about two years ago and is now being used in ever-increasing poundage. The cakes were first used in filling winding, and most of the earlier work was done with 150/40 bright yarn. Currently about 45% of the distribution of rayon yarn in cake form is for flat filling winding. In addition, throwsters are using cakes instead of skeins for crepe twisting, and the full-fashioned hosiery industry is taking a substantial quantity of yarn in this form and it may become one of the more important customers for cake yarn. Some mills are twisting direct from cakes for voile twist by using converted cotton twisters and ring spinning frames. Dyeing of cakes has been carried on successfully for some time.

There are several distinct advantages in connection with the delivery of rayon yarn by producers in cake form. In the rayon producer's plant several processing operators are eliminated, and at the same time a better quality of yarn is produced. Regarding the use of cakes, it may be stated that whenever yarn is to be treated or twisted the cake is a more desirable package than a cone or skein.

Several factors must be taken into consideration in the handling of cakes to achieve the best efficiency and highest quality of product. Cakes present the problem of a free run on the first three-quarters of a cake, with the inside quarter having an area of creases and hollows. Improvements in cake production, however, are now reducing these malformed areas.

The cake-holder assembly is one of the principal factors entering into the handling of cakes on a volume basis. The base on which the cake is set is made of suitable material, such as Bakelite or plywood, approximately 6½ in. in diameter, with a center spindle on which an inverted cap or "pie plate" is placed.

As the rayon cakes have a definite top and bottom, it is essential that they be placed on the base in the proper position. Initial "S" twist cakes unwind in an anti-clockwise direction, and "Z" twist cakes unwind in a clockwise direction.

THE CAKES have a knit cover or wrapper for protection against damage in winding. When preparing for winding, the lower half is turned down over the base of the cake-holder. The upper half is pulled off over the upper half of the cake until tight, and without wrinkles on the inside of the cake; and the ends are then tucked into the top of the insert on the inside of the cake (Figs. 1 and 2). These inserts are of pressed fiber or Bakelite and are used on the inside of the cake to give it body when it has unwound to a point where it would not support itself properly. The inserts should be rolled inside the cakes so that the running yarn will slide over the edge of the insert, rather than strike against it. In other words, the lap-over edge of the insert should point away from the direction in which the yarn is unwinding.

On the vertical spindle of the cake-holder there are centering springs which tend to hold the insert out with a slight pressure against the inside wall of the cake. This pressure should always be at the minimum. Otherwise, overlapped or entwined sections of threads may be produced and the resulting plucks or jerks may cause excessive breakage in the winding. The insert sizes vary with the size of cake being used. An insert of standard length, 15 or 16 in. long, rectangular in shape, may be used with a height of ½ in. greater than the cake and of 0.02 thickness. These measurements appear to give the best all-round performance, since they make the outer edge of the "pie plate" or cap (See Fig. 3) even with the top of the cake, and prevent angularity due to the drop in the pie plate edge.

Pie plates that are too large cause excessive waste and stops due to the amount of breakage caused by the angularity where the yarn is drawn from the top of the cake around the edge of the pie plate. This is due to the added tension caused by snubbing around the increased angle of a too large pie plate, which multiplies the original tension on the yarn as it leaves the cake.

As the cake decreases in size or diameter, the yarn, because of creases and wrinkles, is harder to remove, causing the balloon to decrease in size and creating a stripping action rather than a ballooning action during unwinding. If a balloon is not produced, there will be a shelling of the cake, which, through lifting the loose rings of yarn, may cause additional tangles and plucks in the yarn.

The relation between the inside diameter of the cake and the outside edge of the pie plate is an important factor when determining the proper size of plate or cap needed to keep the yarn away from the cake side. A line drawn from the outer edge of the pie plate to a point at the bottom of the inside wall of the cake, forming an angle of

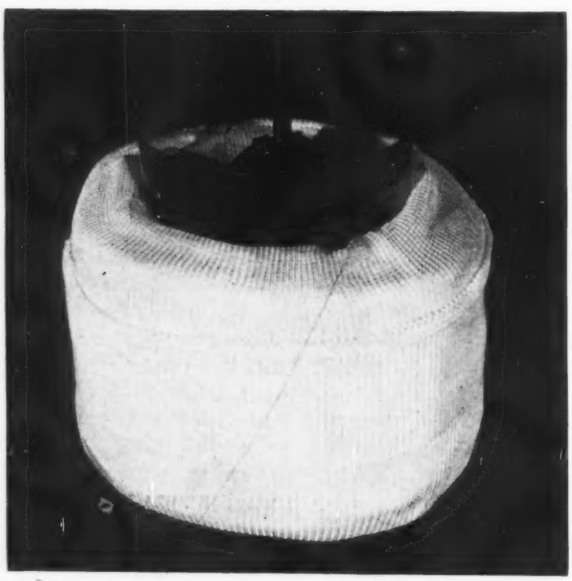


Fig. 1. Cake with cover intact as mounted on the cake-holder with insert in place.

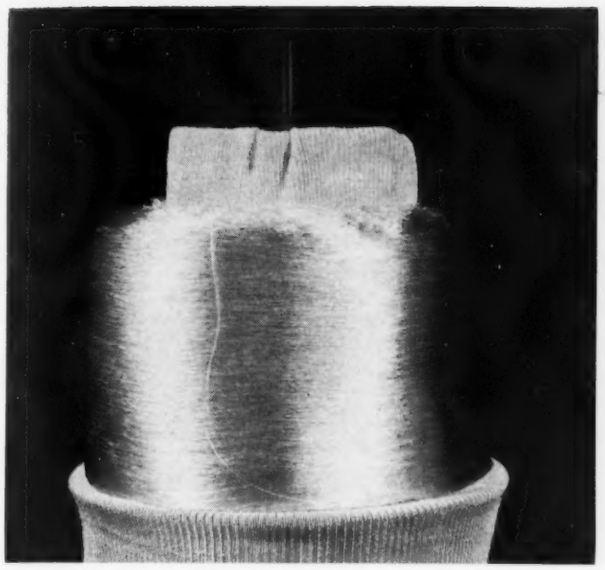


Fig. 2. Second step in preparing cake for winding, showing cover stripped back from cake.

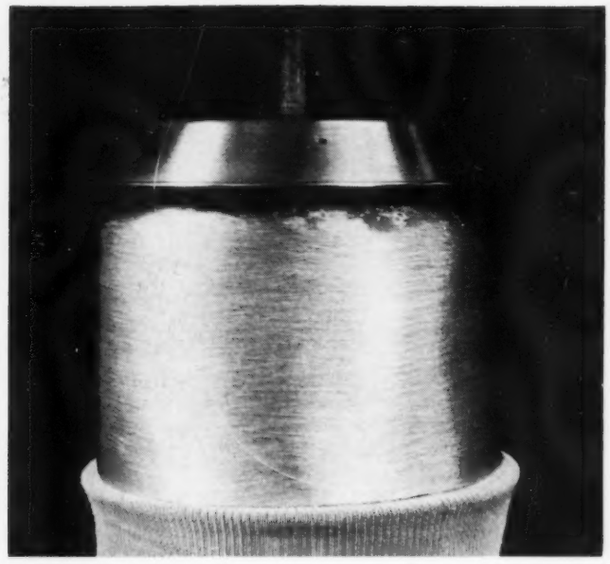


Fig. 3. Final step in preparing cake for winding, showing cover stripped back from cake and "pie plate" in place.

approximately 16°, gives the best winding results. The pigtail or guide should be set exactly in the center over the top of the cake to give an even balloon. A good starting point is to follow the old rule of having the guide set the same distance above the package to be wound as the height of the package itself.

Variations of the set-up described above have been used with good results. For example, cakes have been placed on a board with no cake base and the lower half of the cake cover pulled loose out around the cake. Some mills use a piece of plywood, cut round, slightly larger than the cake diameter. With this, a wooden core approximately 3½ to 4 in. in diameter and 4 in. high with a wooden base is used, the wooden core acting as a centering device for the insert and the cake.

For uptwisting, the cakes are handled in the following manner: Cake covers are tightened by pulling the outer edge of the cover up over the cake as far as possible, while holding the upper and inside half of cake firmly. The cover then holds the cake in its original formation while being treated, which is conducive to better winding.

THE SOAKING OPERATION is carried out by placing the cakes individually in a tub containing the soaking solution; or they are wrapped four or five together in a piece of cheesecloth before being placed in the soaking bath. The cakes should be allowed to sink of their own weight and should not be pushed under the liquor. This prevents "trapping" of air and assures uniform application of treatment. Some mills have converted soaking machines, using a perforated tube or rod for the cakes. The liquor is forced through these into the cakes under a low pressure, and in addition, the rods are lowered into the tub on the machine. By this means even penetration is obtained, giving the cakes the desired treatment. Temperature of the bath is usually about 135°F., and soaking time approximately 30 to 35 min.

Two types of extraction are in general use—the regular basket or hydro-extractor and the pot type. Usual procedure in basket-type extraction is to take the cakes from the soaking tub and allow the surplus liquor to drain off. The cakes that have been placed in cheesecloth are taken from the cheesecloth wrappings and are placed with the bottom of the cake against the side or outer wall of the basket. The centrifugal force of the basket in spinning then tends to force the cakes against the outer side of the basket. It should be noted that unless the cakes are placed in the manner mentioned above, considerable distortion of the cake may take place.

Pot type extraction has the advantage of keeping the cake in its original form. Each cake is placed in an individual pot and spun for the desired time to get the proper moisture content. Mills, as a rule, desire 100% moisture content and the speed of either type of extractor governs the time limit.

After extraction, the yarn is placed in a dryer for several hours until dry. Several types of dryers are used. These are regular, sectional, converted skein, or the new tunnel type. If the older type of skein dryer is used, several runs through the dryer may be necessary to obtain proper drying. It is well not to use too high heat because of the possibility of drying the yarn too much, making it brittle. After drying, the yarn should be allowed to condition for 24 hr. in the room where winding is to take place.

WINDING is done on regular-type winding frames, using the cake set-up described earlier in this article. This set-up is adaptable to all types of winding equipment. One of the principal points in the winding of cakes is the tension. Two types of tensions are used —either a snubbing or a disk type; and there are several variations of each method, all producing the desired results. One point to watch is to avoid using too heavy tensions, the momentary multiplication of which will result in shiners.

Treatment of cakes in the hosiery trade differs from that of the throwing trade for crepe fabrics in that a wax is applied to the yarn either in soaking before the twist is inserted, or in the coning operation of the twisted yarn by use of an emulsion roll. It is necessary then to set the twist in the usual manner. In the case of yarn treated with Avconit, the wax is dissolved in a solvent, such as Stoddard's. As the majority of mills do not have extra drying capacity, use of a solvent of the above type is advantageous. Water-soluble waxes are being developed, the chief drawback to these being lack of drying capacity necessary to handle the yarn after treatment. The purpose of waxes is to make the yarn slip easily in throwing and knitting by holding the twist spirals after the twist is set.

Cakes are working satisfactorily in certain sections of the circular knitting industry and are being transferred similarly to cone yarn. By using a transfer tail made from the inside end of the cake, one can knit from cake to cake.

Quick Detection of Fiber Damage

Process injury to cotton and rayon fibers found by chemical and microscopic tests

In an article appearing in the December issue of TEXTILE WORLD, Mr. Krauss discussed the chemical and microscopic detection of wool fiber damage. Detailed information on the identification of fiber damage caused to cotton during processing and to rayon during manufacture is contained in this article along with comments on damage caused to fibers in the hands of the consumer.

By WALTER KRAUSS,

Technical Laboratories;
Sears, Roebuck and Co.

DAMAGE TO COTTON FIBERS of a physical nature may, in certain forms, appear similar to wool fiber damage. This close resemblance is apparent when utilizing reused cotton, the broken and serrated appearance characteristic of this type of damage is illustrated in Fig. 1 (*a*) for cotton and Fig. 1 (*b*) for linen. Such damage is frequently caused by wear.

Damaged cotton fibers can be classified into three groups; namely, (1) fibers with partly damaged cuticle, (2) fibers showing numerous cracks, (3) partly and completely torn fibers as shown in Fig. 1 (*a*) and (*b*).

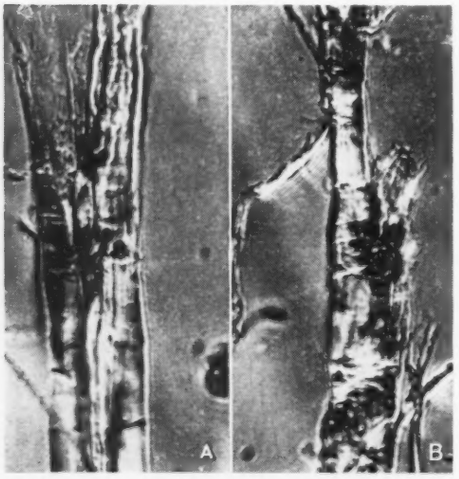


Fig. 1 Physical damage to a cotton fiber through wear is shown at *a*; note the cracks that are evident in the fiber and the frayed end. A worn linen fiber is shown at *b* (500x, polarized light).

Chemical Damage—Cotton, like other vegetable fibers or like regenerated cellulose rayons, show a high susceptibility to acids and oxidizing agents which change the cellulose into hydrocellulose and oxycellulose, respectively. The latter can be determined by the use of a Fehling solution. This solution must be prepared in two parts as follows: Solution I. 692 grams of Rochelle salt (sodium potassium tartrate) and 200 grams of sodium hydroxide are dissolved in water to make 2000 ml. of solution. Before use this solution should be filtered. Solution II. 138.6 grams of copper sulfate are dissolved in water to make 2000 ml. of solution. For use, one part of Solution I and one part of Solution II are mixed with two parts of water. The sample is boiled five minutes and is rinsed a few times until all of the solution is removed. The amount of copper oxide precipitated on the fibers is in relation to the degree of chemical deterioration of the cellulose, Fig. 2.

The Markert reaction, as given below, is for the determination of the degree of damage on cotton. The fibers are cut into short sections with a sharp instrument and are mounted in 19° Be. sodium hydroxide. Failure of the mushroom-like swellings to appear at the cut ends, Fig. 3, indicates damage.

Mildew—The mildewing of cotton and vegetable fibers can be observed under the microscope by the presence of spores and threads, even before a tendering of the fabric is noticeable. This mildew formation is shown in Fig. 4.

DAMAGE TO SYNTHETIC FIBERS—*Physical*—Physical defects in synthetic fibers caused during the manufacture of the yarns may be grouped as those caused by solid or gaseous enclosures in the fibers, those caused by a variation of fiber diameter or cross-sectional contour, and torn or frayed filaments caused by defects in the spinnerets.

Finding such defects in synthetic fibers is, with present manufacturing methods and controls, a rarity. Enclosures caused by impurities in the spinning solution, as illustrated in Fig. 5, should not be mistaken for intention-

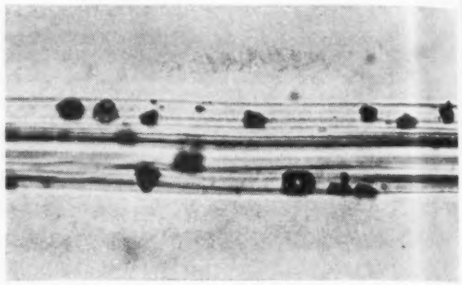


Fig. 2 Chemical deterioration of cellulose in viscose rayon determined with Fehling solution. Amount of copper oxide precipitated on the fiber indicates degree of deterioration (500x).

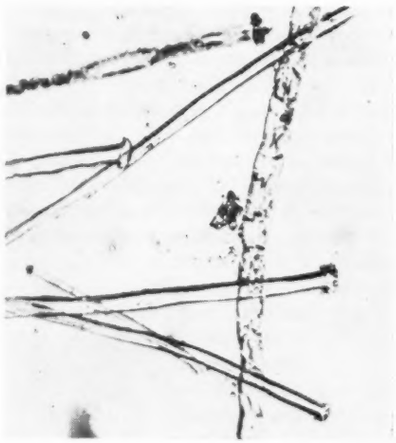


Fig. 3 Markert reaction determines degree of damage on cotton. Mushroom-like swellings on fiber ends indicates no damage (115x).

Fig. 4 Fungus growth, or mildew, may be detected on cotton with aid of the microscope (500x).

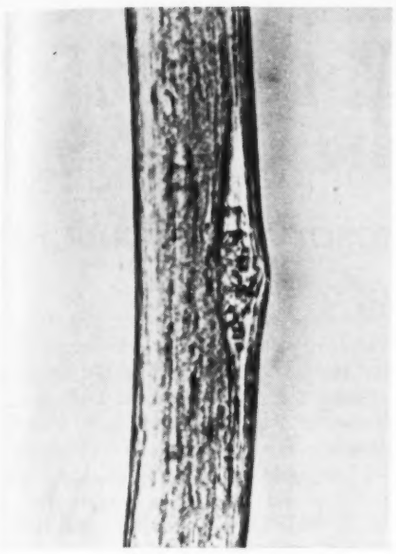


Fig. 5 A casein fiber (Aralac) showing a solid enclosure contained in a filament. This occurs in spinning (500x).

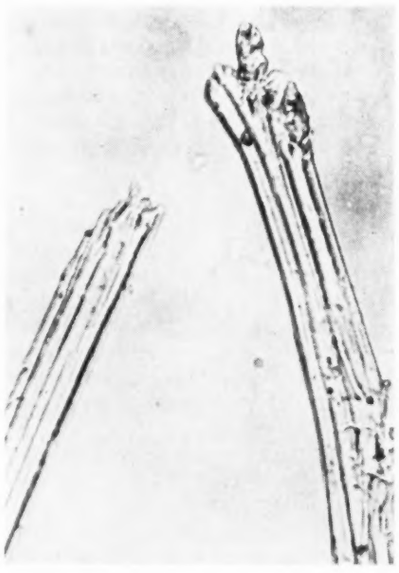


Fig. 6 Physical damage to rayon fibers caused in the hands of the consumer by breakage while the yarn is wet (500x).

Fig. 9 Silverfish damage as it appears on a rayon fabric (12x).

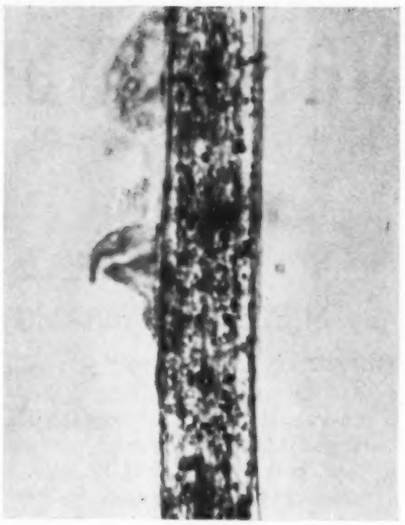


Fig. 7 Deodorant damage to rayon is determined by aluminum oxide precipitate on the fiber (500x).

ally introduced solids, such as delustering agents or aerated filaments.

Low wet strength of most rayons and protein fibers is the cause for considerable fiber damage, especially at the hands of the customer where fiber breakage occurs, as illustrated in Fig. 6.

Chemical—The effects of chemicals on synthetic fibers is varied, depending upon the type of fiber. Chemical deterioration of rayons through deodorants containing aluminum compounds can be checked by means of a special preparation, Aluminon, which brings out the precipitates of aluminum hydroxide on the fiber by dyeing it a bright red color, Fig. 7. From the consumer angle, fiber damage of this nature is a frequent complaint.

Bacteria and Insects—Recent tests show that the casein fiber, Aralac, is subject to the attack of moths and carpet beetles in the same manner as wool and other hair fibers. The damage can be identified by the characteristic bite marks on the fibers when viewed under a microscope, Fig. 8.

Damage by the silverfish, a small insect found in warm, damp places, is occasionally noticed on rayons, especially fabrics containing considerable amounts of organic finish. The general appearance of the damage is similar to that of moth damage and appears in Fig. 9. Identification of the damage under the microscope, Fig. 10, is at times difficult unless fragments of the animal such as scales or specks of excrement adhere to the fabric.

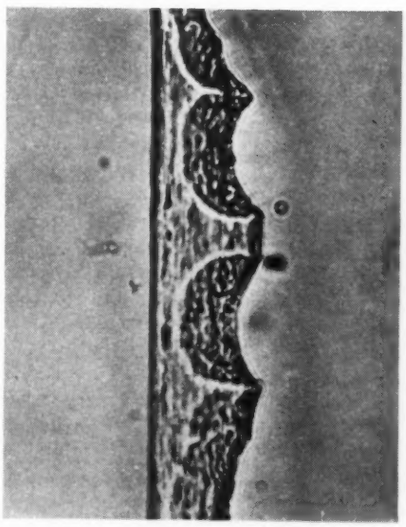
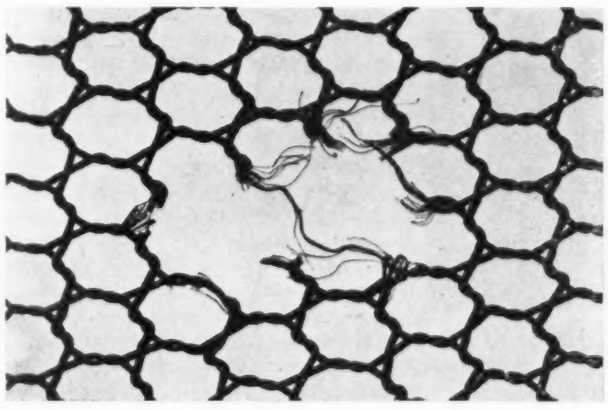
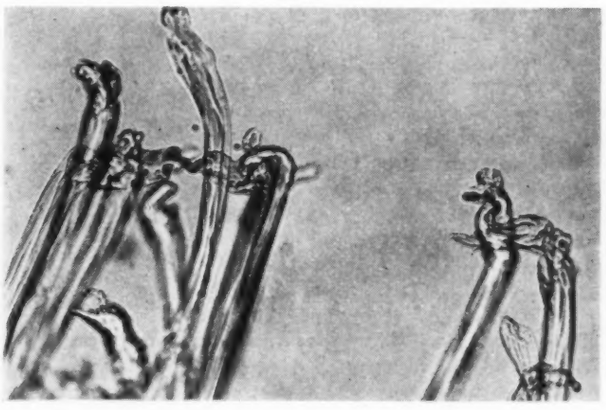


Fig. 8 Moth damage to casein fiber is evident by bites appearing in the fiber (500x).

Fig. 10 Appearance of rayon filaments attacked by silverfish, as viewed under the microscope. Chewed appearance of the ends is characteristic of this damage (500x).





Care in Storing Gray Hosiery

Protection against damage by direct sunlight one of necessary precautions

By MILTON M. ABRAMS

STORAGE OF GRAY HOSIERY in a mill or dyehouse necessitates careful attention to environment. If the stockings are to be stored for any considerable length of time, gray goods should be kept in a room away from sunlight. If there are windows in the room and they are so situated that any rays of sunlight can possibly fall on the merchandise, the windows should be covered over with shades or canvas, or painted over, or should contain glass of a translucent nature.

Constant and steady exposure to sunlight is most harmful to the gray goods. It dries up the lubricating oils which the yarn has absorbed during the throwing and knitting operations. This exposure hardens and dries out the yarn. In addition to making the stocking sleazy, it may also cause uneven dye penetration. The dry, hard portions of the stocking will not boil off as readily as the fresher portions. In such cases the affected areas of the hose will not absorb the dye liquor as promptly as the rest of the hose, and the uneven dye penetration may result in an unbalanced color absorption.

Strong sunlight, if concentrated upon certain areas for an indeterminate period, will "burn" the hose at the exposed parts. This "burn" tenders the fiber and reduces its tensile strength and wear-resistant qualities. This may not make itself evident until the stocking eventually is worn. Then suddenly a deluge of complaints descends upon the unsuspecting storekeeper, and the mill is perplexed.

STORAGE BINS should be so arranged as to permit to the best possible degree the free circulation of air throughout the room. There should be some aisle space between each row of bins and some clearance at the ceiling so that the air can circulate. This helps prevent mildew and rancidity. If the goods were packed ceiling high and in an airtight room, with no aisle space, the mill would be only inviting trouble.

The bins should be designed to permit the gray goods to be stored in the bin lying flat at full length. The hosiery bundles should be placed in the bins "front to back," the welts or tops of the stockings facing and nearest the outside of the bin, and the feet of the stockings in the back of the bin. This not only permits the greatest possible amount of stock to be stored uniformly in a minimum of space, but it also facilitates the counting of the stock and taking of inventory. One has only to count the "noses" facing one at the front end of the bin to take the inventory.

If an adequate amount of space is available, it is good practice to use two bins for one style. The newest, freshly made merchandise can then be put away in one bin while the old stock is being used out of the other bin. This permits the mill to rotate its gray stocks and prevents old stock from accumulating at the bottom of the bin, with only the fresh stock being used from the top layers. Eventually, under such conditions, the old stock would dry out, become rancid, and perhaps mildewed. If double bins are not available, the same procedure can be followed in a single bin. This can be done by taking the old stock out of one side of the bin and placing the fresh stock in storage on the other side of the bin. When the reserve is exhausted, the procedure can be reversed.

This stock room for storage of gray hosiery embodies several of the suggestions made in the text.

SEGREGATING STYLES AND SIZES. As hosiery is knit into various styles and each style is subdivided into sizes (and perhaps other subdivisions, such as special lengths, special stripings, and other variations), it is advantageous to employ a definite system of stock handling and storage. It is logical that all sizes and variations of a style should be stored as closely together as possible. Nevertheless, pains must be taken to segregate each individual size and variation; otherwise there will be nothing but confusion when an order is to be filled. There are many ways and methods of accomplishing this. The procedure is too simple and elementary to be described in detail here, but the importance of such preparation should not be overlooked.

A simple system is neither laborious nor tedious, and it will greatly facilitate the handling of the gray goods when orders are to be filled at short notice. Some mills use tickets of different colors to denote different sizes and other variations in a style. A sample ticket corresponding to the ticket used on the contents of the bin is pasted or nailed to the outside of the bin, and this serves as a guide when making additions to or withdrawals from the stock.

Care should be taken to see that there are no rough places in the bins where the hosiery might catch. This often occurs in wooden bins, where there may be splinters or protruding nails. These bins should be regularly checked over, protruding nails hammered in place, and rough places in the wood sandpapered or covered over. Steel bins often have protruding nuts and bolts and rough corners where the bins are joined together. These rough surfaces can be covered with adhesive tape. The small amount of trouble entailed in checking over and protecting the bins will be more than repaid by the elimination of costly pull threads and similar damages.

The Life-History of the Zoot Suit

It all started with Li'l Abner and look where the darned thing is now!

Editor's Note: **When we wrote an editorial about the zoot suit (TEXTILE WORLD, October 1942, page 60) we didn't know what we were starting. As the result of our manifestation of interest in this modern phenomenon, we received the following letter from a member of the staff in our Washington office—probably the only zoot suit historian in the world. We cannot allow our readers to stay ignorant of these cosmic facts any longer.**

WASHINGTON, D. C.

Editor, TEXTILE WORLD:

I was greatly surprised to find you had interest in the zoot suit soup craze! I had thought I was the only "fan" in existence. I am interested in them mostly from the psychological angle. For possible interest to you, I'll write in a rambling form, all I can think on the subject of the zoot suit.

They started about four or five years ago with a comic strip artist named Al Capp. The strip is entitled "Li'l Abner." It does not specialize in zoot suits—Li'l Abner is a hill-billy of the first water, through and through. The zoot suit is the artist's interpretation of how "city slickers" looked to his hill-billy character when he first visited the big city.

Abner made his first visit at about 17 years of age. His own clothes (you can readily understand) were smelly of moth balls, the pants legs were tight, short, and generally too small. His coat was the "blue serge" you can't escape in Sunday-suits. That, too, was too small, short sleeves, stretched seams, etc. When he saw all the well-dressed (?) people in New York (that's not a knock) his mind (and the character is too dumb to have a mind) visualized the clothes that the artist drew.

We'll follow him. He gets off the train, scared, a stranger in a hustling city of millions. His own home town had about 100 to 200 people of the lowest and dirtiest form. The artist thrived on drawing low-brow things. For instance, the people ate stew made from skunks. Their underwear was burlap bags. Their names were "Unmentionable," "Unbearable," "Available," "Swinebird," etc. The strip was so base that my stomach flopped every time I read it. But the morals of the people were high. Their language, though heavy with the mountain accent, was not vulgar. No cuss words! And their actions were not lewd sexually.

Life Magazine photo by Marie Hansen

Typical zoot suit, or a "solid set o' threads" as some of its devotees call it—certainly a good consumer of yardage.

However, when Abner reached the "big city" he saw clothes that were cut full, roomy, good material, and showed signs of some wealth. (To him 20¢ a year was a fabulous fortune.) Even the poorest man had clothes that fit better than his own. Al Capp did not attempt to create a different style—I don't believe he had that in mind. He was interpreting Abner's visualization of how we dress. He used the "zoot suit" on people standing on the corners reading newspapers. None of his main characters was dressed that way—only people in the background were that way. Their hats were down over the head past the eyes, with a huge brim. The shoulders were well padded on the coat with full sleeves, long length, small waist and usually of large plaid design. The pants were as they are now.

Well, from this ridicule started the zoot suit. First a long coat (I remember my desire at that time for a coat of maybe an inch or two longer than the conventional ones). Then came the pads in the shoulders; then the full sleeves, fancy pockets. People have always "pegged" the trouser legs. Fullness was added to the knees and pleats at the waist, with the waist to the arm pits.

Striped shirts were worn with a no-tab collar and either a "shoe-string" tie or a knitted one in diagonal bars. It is surprising that loud colors are not worn. Perhaps that is due to the fact that the comic strip is in black and white.

However, you will notice on every suit of zoot the colors harmonize—though we admit the lines are horrible. These people use "good taste" in choosing their clothing. They know material better than average; they have a flare for harmonizing the lines of their clothing to fit together to form a streamlined effect—like a cigar.

This craze was quickly grabbed up by all the jitter-bugs. And heaven knows there's millions of them. In fact, had not the war come along, about half the population would be dressed in that manner in five or six more years. You may laugh at this, but so will anyone who does not know any more about them than what they look like. I know I did. But I stuck to the job and watched it grow. You'd be surprised at the size of this group now. No fig-

ures of course, but I imagine about one out of seven men between 16 and 20 (or more) are zoot suiters!

A zoot suit is more than dress. The person must be a very good dancer—in a jitter-bug way. Else he's not accepted in the zoot-suit circles. I notice that the styles are creeping into the men's clothing of today. However, I'm glad the war stopped it. Sitting back and quietly watching the nation go mad is not too much fun. Their speech is part of the get-up too. It usually rhymes: reet pleat, drape shape, brown crown, etc. Or: don't let it fool ya, Julia; don't let it hurtle ya, Myrtle. Now I notice that the speech is being changed: pleat reet, shape drape, etc. I wonder at the intelligence of these people. But this part is of no interest to TEXTILE WORLD.

Here is the description of a zoot suit. The hat has a 3-inch crown with a 7-inch brim that is loose enough to touch the ears. The tie is the conventional shoe-string with a striped shirt and no-tab collar. The coat is knee-length, padded shoulders, and very full sleeves, fits tight at the waist and mostly a plain color. The trousers are full of pleats at the waist with the tops near the chin. The suspenders have their surplus material (usually knitted) hanging in straps down the front. The pants at the bottom have zippers to let the feet in. They are mostly skin-tight at that point. From there up they are more than full. The shoes are square-toe, suede, plaid shoe strings, and ¾-inch soles. I don't know what the underwear is. Socks are plain, knitted. They have a key chain that falls in three folds to 4 inches from the ground. And that is it.

Recently there were dances at the Washington and Willard Hotels for "zoot suiters" *only*. The place was packed and jammed and of course news photographers were in "Seventh Heaven."

There are no pictures available of the Army zoot suit. They said the idea was "immoral." The colored man's uniform cost him about $175. They even announced it over the radio. [This refers to news item "M.P.'s Pick Up Soldier Wearing Zoot Uniform, TEXTILE WORLD, December, 1942, page 128.] That in itself is indication that it's growing. Every where you turn you meet it. Yet it's always ridiculed.

One point: I AM NOT A WEARER OF THE ZOOT SUIT. I NEVER WILL BE. I THINK THEM HORRIBLE. But it is amusing to watch the people.

I have never run across a complete suit on any one person. Some have the hat wrong, or shoes, or chain, etc. You would think that once someone would strive for perfection. Maybe I'll do it; I certainly know enough about them.

Well, here you are with the complete story. I often wondered why Al Capp never drew his character, Li'l Abner in one! Oh, yes, another point, their hair is left to grow long—a "cat cut" they call it.

I'd appreciate any points you can show me. Or any information you can give me. All this is my own observations over a period of four or five years. I can't understand the "why" to it. Maybe you can throw some light.

DORSEY ADAMS

P.S.—From time to time, I run into good pictures of them. I'll send them along. Their costume is crowding into the movies and already there has been one song about them. You can see the large influence it has had on the population.

Continuous Dyeing of Navy Fabric

New method for applying indigo speeds up production of flannel for uniforms

INSTALLATION AT HAMPSHIRE WOOLEN CO., Ware, Mass., of a continuous process has greatly speeded up the indigo dyeing of 11-oz. flannel for Navy uniforms.

The new process was developed by Fulton Rindge, president of Hampshire Woolen, and lieutenant commander in the U. S. Naval Reserve, with the cooperation of E. I. du Pont de Nemours & Co. The continuous dyeing machine employed was built by Riggs & Lombard, Inc.

A description of the new process was given in an address by George O. Linberg, of Du Pont, at the December meeting of the New York Section, American Association of Textile Chemists & Colorists.

Developed at a cost of $50,000 for experimental purposes, the new process is characterized by its simplicity and speed as compared with the conventional method of stock dyeing. With this process approximately 5,000 lb. of wool in form of piece goods can be dyed in 8 hr. with two men in attendance at the machine, whereas the average length of time required for stock dyeing that amount of wool is much longer and more labor is required in the processes involved.

First experiments in continuous indigo dyeing at Hampshire Woolen were carried out with a rebuilt machine, nicknamed "Oscar" by the workers. As a result of these experiments, a new machine specially designed for the job was built.

Previous to dyeing, the goods are fulled, scoured, and carbonized in the white. Without further pretreatment or drying, they are then dyed continuously, and again scoured. Total dyeing time is 16 min. Cloth speed is about 10 yd. per min.

The goods receive two dips of approximately 3 min. each in the reduced indigo bath and are allowed to oxidize for about 5 min. after each dip. The dye tank holding the stock vat of reduced indigo has a capacity of 3,000 gal. This is kept at a constant level by feeding in additional solution to make up for that which is carried away by the cloth.

Formulas for the stock vat and the feed-in have been carefully worked out to insure uniform dyeings. The machine is designed to minimize tension on the fabric and to insure proper penetration of the dye.

This new process has not only speeded up the indigo dyeing of flannel for the Navy, but is expected to lead to the development, after the war, of methods for continuous dyeing of wool piece goods with a wide range of vat colors.

Accident Prevention in Wartime

Considered by textile men at annual meeting of the National Safety Council

GEARING SAFETY PROGRAMS to war time conditions by better training of employees, more effective use of accident records, advanced job analysis, and other measures were discussed at the annual meeting of the National Safety Council, held recently in Chicago. Speakers at the meeting of the textile section were F. A. Flather, Jr., Boott Mills, Lowell, Mass.; A. W. Smith, Brandon Corp., Greenville, S. C.; J. Alex Fife, Ware Shoals (S. C.) Mfg. Co.; N. H. Taylor, Merrimack Mfg. Co., Huntsville, Ala.; and Prof. E. W. Winkler, North Carolina State College, Raleigh, N. C.

Safety work is nothing new at Boott Mills, according to Mr. Flather. Over a period of many years the safety record of the mill showed steady improvement. Then came Pearl Harbor; overnight defense work became war work. Soon it was noticed that accidents were increasing, despite the fact that the safety program had been greatly expanded. Accordingly, an intensive investigation was started to determine the reason for this disappointing up-trend in the accident rate. Some interesting conclusions were reached as a result of these studies which are believed to be basic enough to be helpful to almost any manufacturing plant, regardless of product. These conclusions as reported by Mr. Flather are summarized in the accompanying table.

THREE DIMENSIONAL SEEING, a new theory of lighting, and its application to lighting of textile mills were described by Professor Winkler. He stated in part: Former theories of illumination and practices have in general considered the quality and quantity of light and the reflecting characteristics of walls and ceilings. The new theory includes all these factors plus the addition of color to machinery and equipment in such a way that danger zones are highlighted and visual efficiency is improved.

In the average textile mill looms and other equipment are usually painted black, dark green, or deep gray. There is little contrast between moving parts and stationary parts, and danger zones are not highlighted with colors. If painted at all, the walls and ceilings are usually painted a glaring white. This lack of contrast on machine surfaces, coupled with a uniform white or gray from above, will cause eye strain, headaches, and fatigue. When the general illumination is low, the combined effects of insufficient light and lack of color contrast may decrease production

Recommendations for Reducing Accidents From Study Made at Boott Mills

1. A person of long experience in a given department is the safest type of employee and helps to keep nearby less experienced operatives safe.

2. The younger the employee, the more supervision, instruction, and discipline are required. This is particularly true of high school boys and girls and this group has the poorest safety record. If we give them intensive courses of safety instruction before they ever get inside of a factory, we can look forward to a practical elimination of industrial accidents in the future.

3. An individual who has worked in a factory of any sort is safer in general than one who has never worked with or around machinery before.

4. As the necessity for more and more war material requires second shift, third shift, and overtime operations, people's accustomed habits are changed. This requires great broadening of the safety program which must function during every operating hour. To be successful, each individual in the entire organization must feel the presence of the safety system wherever or whenever he works so that he will constantly think before he acts. Unless the safety program is made a direct function of top management, it is likely to become routine, secondary to production, and increasingly ineffective.

5. As the draft and enlistments take of necessity, the youngest, strongest, and most alert men—and now women—industry must get along with those of us who are not subject to military call. Aside from being older and having certain physical handicaps, those of us who remain must produce more than ever dreamed of before to supply our men in the fighting forces. This calls for more effective safety work on the home, the school, and the industrial fronts.

6. The mental state of all employees is of the utmost importance to the safety program. A person whose mind is not alert to the operation being done is easy prey for a supposedly properly guarded machine. With so many persons having near relatives on the fighting fronts, one's thoughts cannot help wandering to distant danger spots when in reality a finger or hand may be exposed to a hazardous machine point. Even those who have no near ones in the fighting forces, nevertheless feel the pressure and excitement of war news and may expose themselves to danger as their minds wander for a split second.

7. With the average mill operative receiving perhaps two or three times his former average earnings, he has a strong urge to spend a large part, if not all, of his pay. The spending on excessive food, drink, and entertainment has resulted in marked increases in absenteeism, digestive disorders, physical fatigue and mental depression. The approach to this problem is educational, rather than through guards and bulletins and committees. The patriotic appeal must be stressed, and quiet individual attention must be given and followed up repeatedly.

by a surprising percentage. Likewise, the possibility of accidents is high.

Since the eye is naturally attracted to the brighter points, painting of danger areas with light colors will improve safety in just about the same ratio that the danger zone stands out from its surrounding parts. The folder may be considered as an example for this type of safety painting. At the end of each stroke, the moving element of the folder comes into close contact with the stationary parts. If the color of the stationary part contrasts with the color of the moving part and the average color of the cloth being folded, the danger point will stand out and there will be less tendency toward accidents.

The picker might be considered as a second example. The controls are usually on the side of the machine and are illuminated from an overhead source, often directly over the machine. Here the location of the light plus the addition of color to the machine and the controls will improve the working area to a great extent. The card may be considered as the third example. Here it is necessary to clean certain parts while they are in motion. Highlighting the parts with color will emphasize the boundary line between stationary parts and moving parts, provide more uniform lighting for the worker, and definitely outline the danger zone.

In areas devoted to such processes as the handling of raw cotton, breaking of bales, and feeding the mixer, use of light-colored paint will do much to reduce the visual effort required with the recommended low levels of illumination.

The weave room represents the other extreme in regard to illumination requirements. Here the worker is dealing with fine yarns, and very often there is no opportunity to produce a contrast by the application of color. It is believed that a uniform general lighting of about 30 foot-candles, combined with about 15 foot-candles of oblique lighting coming from the side at about 20°, will greatly improve the detection of faults and cause less eye strain and fatigue on the part of the weaver.

Research conducted by Philadelphia Electric Co. in collaboration with E. I. duPont de Nemours & Co., Inc., shows that the best combination of colors for a machine shop is light gray for the general surfaces of the machine and light buff to make the working areas and danger zones stand out. In the textile plant the problem of grease and oil is not so serious as in the machine shop, but dust and lint would have to be considered. This means other combinations of colors may give excellent results. It is possible that more than two colors could be used.

ACCIDENT RECORDS to be effective should accomplish at least two main objectives, it was stated by Mr. Smith. They should furnish the directive that will stimulate supervisors and employees to action on the safety program, and they should show how to reduce compensation costs, through the proper handling of cases, after the employee has been injured.

The basic record should be a complete report of each accident, submitted by the supervisor of the department in which the accident occurred. It is recommended that a form similar to that required by State compensation boards, or insurance carriers, be used.

Supplementing this should be a report when the injured returns to work, giving the name of the injured, date of injury, date disability began, hour and date injured returned to work, and whether or not the injured is employed on the same job, at the same pay, as before the injury.

Records of first-aid cases need contain only a few facts and should be kept by the person in charge of first-aid treatment. Essential facts would be the name of injured, date of accident, department, treatment given, nature of injury, and cause of accident. This should be analyzed monthly, by breaking down into types of accidents by departments.

The information contained in the aforementioned records should be transferred to an analysis sheet, where it can be tabulated. The tabulation should be by departments, and should give the hours of exposure, number of employees, number of injuries, which should be classified as temporary, partial, or permanent, with the time lost in each classification. Frequency and severity rates for each department for the period should also be given.

Pre-employment medical examinations and job analysis are essential in controlling accident costs. The record of the medical examination should be left to the doctor, but should certainly state the condition of the vital organs and other important parts of the body. The record of job analysis should go into as much detail as possible concerning the department, the name of the job, the nature of the work, the kind of machine, and the physical requirements of the operator.

ADVANCED JOB ANALYSIS as a safety tool was discussed by Mr. Fife. The logical place for starting such an analysis, he said, is with the people on the job. These people are in direct contact with what is done. They know how it is being done. They know of particular hazards, accidents, and near accidents that have occurred in the operation of some job being studied. They have their own pet safety practices. Then, too, the men and women on the job are the ones for whom the safety program is set up.

The next stage is the careful listing of each step or operation in the execution of a job. This is the framework upon which the entire analysis will hang. Care should be taken to ask why or how a certain thing is done as it is. Some hazard or safety prevention idea may be uncovered by the asking.

Key men in the organization should be the ones to make these individual studies of the jobs. It might be wise for the superintendent, his assistant, or whoever heads up the safety program to make one or two studies at the start. Then overseers, second hands, and safety committee chairmen can be used.

The third stage is the bringing together of all the data concerning any particular job. Along with the steps in the primary analysis would be listed the hazards involved in each step. Then, with all the hazards listed, they may be studied and proper preventives set.

Important to remember is that the proper safeguard of some hazard can be either of two types. One type is that of determining of some safe way of doing that part of the job. The other type is the rearranging or changing of the actual way the job is done.

VISUAL EDUCATION is one of the most important ways of training every worker to be safety conscious, it was stated by Mr. Taylor. Perhaps the most widely used of visual aids in safety in a textile plant are safety posters. The effectiveness of safety posters depends on the location of the bulletin boards. Frequently bulletin boards are placed outside the plant at the entrance gates or entrance doors. It is always desirable to place a bulletin board at the first aid station or nurse's office. Another good location is the employment office. Every room of every department of the Merrimack plant is equipped with at least two bulletin boards. The locations selected as being best are near drinking fountains, rest rooms, and exits.

Among the other suggestions offered by Mr. Taylor for effective use of posters are the following: (1) Do not place more than one or two posters on a board at one time. (2) Change the posters at least once a week, and more often if possible. (3) Give the responsibility of keeping the bulletin boards to one person in each department or have one person responsible for all the boards in the plant. (4) Select those posters which are appropriate to your plant or department.

Other important visual aids are safety scoreboards, safety pamphlets, slide film, and motion pictures.

TEXTILE EQUIPMENT NEWS

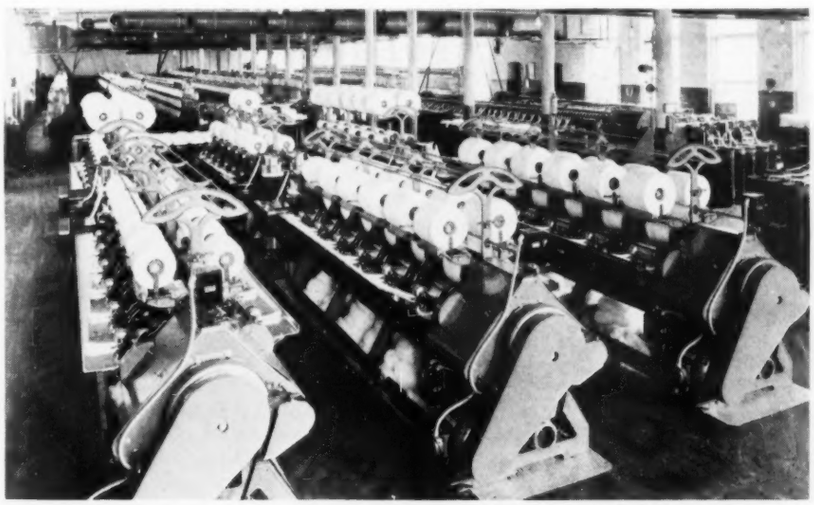
Combers at Trenton Cotton Mills

TRENTON COTTON MILLS, Gastonia, N. C., has recently completed an installation of six Saco-Lowell combers, two lap winders, and sixteen heads of controlled-draft drawing. These machines, with the regular drawing converted to breaker drawing, form a compact unit for processing combed sliver. The sliver to be combed goes from the card to the breaker drawing; from breaker drawing to lap winder; from lap winder to comber; from comber to another lap winder; and from the lap winder to controlled draft drawing.

S. M. Cauble, superintendent of Trenton Cotton Mills, estimates that he is obtaining 40% more production with these modern machines than he formerly secured with old-type combers. Floor space saved by the double-head feature provided room for an installation of two long-draft slubbers. Breaker drawing and one lap winder were moved to the card room on a basement floor, which gave additional space in the comber and speeder room.

Mr. Cauble, very wisely, wanted to have at least one well-qualified fixer as an instructor. Accordingly, the card room overseer was placed with the erector for training. The overseer was already qualified to fix the older type of combers, but was not familiar with the new machines. After working with the erector, the overseer, in turn, instructed his regular comber fixers.

Cleaning, oiling, overhauling, and resetting schedules have been carefully worked out. One machine is scheduled for a complete cleaning each month. At this time every part is exposed, cleaned, and examined for wear, and parts are replaced where necessary. The comber is then reassembled and new settings made.



Photos by James Huntington, Greenville, S.C.

Fig. 1. Installation of Saco-Lowell combers at Trenton Cotton Mills.

Fig. 2. Controlled draft drawing and lap winder used with the new combers

Static Electricity Neutralizer Booster

Severe conditions of static electricity which arise in processing acetate rayon and Nylon have resulted in the development of the Midget Booster by Simco Co., Philadelphia, as an attachment to improve the operation of its static eliminating system. The booster, which is mounted in a 6x6x4-in. iron box, consists of an inductance and a condenser connected in series. Both the inductance and the condenser are especially designed and insulated to operate in conjunction with the Simco midget static eliminating system.

There are three connections to the booster—one is a ground, and the other two are high voltage cables. Connection between the transformer and the Neutrostats of the Simco power unit is opened up and the booster is connected in the circuit by means of the insulated cord connectors, so that it may be connected in the circuit or removed readily. When connected, it gives an added voltage to the system without increasing the electric strain on the insulation of the midget power unit. The booster, in addition, further decreases the slight shock experienced if accidental contact is made with a point of a static bar.

Blackout Lamp

A blackout lamp, approved by the War Department Engineer Board, is being produced by Sylvania Electric Products, Inc., Salem, Mass. This blackout lamp is designed to provide a quick, easy and economical method of supplying sufficient illumination for ease of movement during blackouts. At present, it is available only on a priority rating better than A-2.

The approved lamp is an A-15 type bulb, coated black except for a one-inch aperture in the bulb end which emits an orange-red light. Having a 14-watt filament, the blackout lamp is available in two voltage ranges, 115-125 volts and 30-34 volts.

Variable-Speed Drive

A variable-speed multiple V-belt-drive, called Allspeed drive, has been announced by Worthington Pump &

Machinery Corp., Harrison, N. J. The first of these to be made available is the Model A which has a horsepower range of from 1/3 to 3/4 hp. with a speed ratio of 16 to 1; that is, any speed from 1/8 to twice the driving motor speed. This drive is compact, ball-bearing equipped, and so designed that it can be operated in any plane. Further, it can be directly coupled to any standard motor and the output shaft can be run at motor speed. The drive is said to be flexible enough to be applied to any type of machine within its power range.

Continuous Process Peroxide Bleach

A continuous process hydrogen peroxide bleaching unit has recently been announced by Rodney Hunt Machine Co., Orange, Mass. The system was developed by Buffalo Electro-Chemical Co., using Rodney Hunt equipment consisting of a slack loop washer, a J-box unit, and a peroxide saturation unit. The equipment is constructed of stainless steel and the entire unit operates at speeds of up to 150 yd. per min.

Continuous bleaching, it is stated, is an improvement over the batch method of bleaching because it is continuous in operation, thus making important savings in labor, time, and in floor space normally required for storing goods. The unit takes the place of kier bleaching, but requires two units if a completely continuous process is desired through the bleachery.

The slack loop washer shown at the left, the J-box unit in the center, and the peroxide saturation unit illustrated at the right comprise the continuous bleaching unit; the goods move from right to left (Rodney Hunt).

Mill Maintenance Section

Belt Salvage

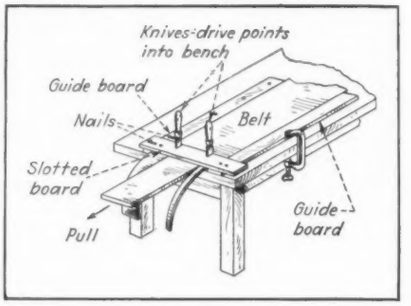
Reduce belt consumption, and at the same time, build up a new standard of efficiency, economy and operation through a program of belt salvage, is the advice contained in "Belt Salvage," the fourth of a series of pamphlets prepared by B. F. Goodrich Co.

There are two factors that make a program of rubber belt salvage practical. First, worn plies can readily be removed and belts cut to proper size for smaller drives. Second, salvaged belts can be vulcanized and made endless in the field, thus making the smaller belt almost as good as new.

A typical service life of an 18-in. 8-ply belt, when worn through the pulley ply, can be cut down to a 14-in. 6-ply belt or divided into 8 and 6-in. 6-ply belts; and later, these belts will be cut down to 4-ply belts in 3, 4, or 6-in. sizes.

Serious injury to a new belt need not put the belt out of service. A short length of belting can be spliced and vulcanized to put the belt back in service, just as good as new.

Simply use carpenters pincers and pull off in strips of plies 3 or 4 in. wide, by hand, when it is desired to remove a number of plies. Start width to be stripped and let one edge rip. A special knife which cuts through only one ply is available and may be helpful. If pulley-side ply is badly worn it cannot be pulled off separately. Pull off with next ply.



Similar apparatus can be set-up in any mill shop for cutting belts.

Do not pull with chain fall or rope tackle, as this will make the job too difficult, too cumbersome, and will take entirely too much time.

A simple and accurate method of cutting belting is illustrated in the accompanying drawing. This procedure can easily be adapted to make one, two, or more cuts at a time, depending on requirements, or on the pulling power available. Usually, one man can pull easily one cut in an 8-ply belt. Both edges of the old belt should be trimmed off in cutting belts down.

Care of Centrifugal Boiler Feed Pumps

Stuffing box packings must be kept in condition and the boiler feed pumps operated properly in mills operating on three-shifts if shut-downs or off-periods are to be avoided. The following helpful suggestions are made which will permit continuous operation of this equipment are abstracted from a bulletin published by Goulds Pumps, Inc.

A slight leak through the stuffing boxes must be allowed at all times to lubricate the packing and help carry away the heat from the surface of the packing in contact with the sleeves. Metallic or asbestos packing is used in the stuffing boxes. When boxes are repacked, cut the rings so that the ends have a slight clearance when fitted to

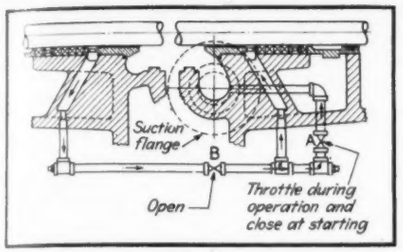


Fig. 1. The amount that valve A should be throttled during operation should be determined by the leakage of the two stuffing boxes. Keep the valve B open at all times.

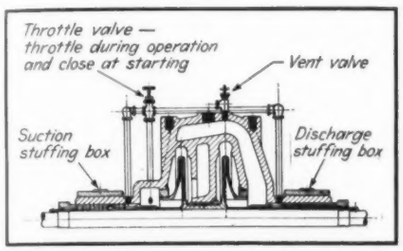

Throttle valve — throttle during operation and close at starting
Vent valve
Suction stuffing box
Discharge stuffing box

Fig. 2. During operation the throttle valve should be controlled until the stuffing box leakage is normal.

the shaft. The packing must be assembled carefully with each ring fitted snugly against the other before installing the next ring. The joints should be staggered. A liberal amount of graphite or heavy oil should be applied around the shaft and packing rings. It is very important when packing with foil packing that the packing be placed in the stuffing box so that the winding of the foil is in the same direction as the rotation of the shaft. If placed counter to rotation, the friction will tend to roll up the edge of the foil winding, and the packing will wear out quickly. The glands can now be tightened gradually allowing liberal leakage at first.

The operation of stuffing box controls is shown in Fig. 1 for a stuffing box piping ranging from 3 to 6 in. and in Fig. 2 for 2 in. piping.

OPERATION:

1. Always adjust stuffing box packing gradually, taking only a partial turn at a time, alternating on each nut. This should always be done at rated temperature and pressure. Allow the box to adjust itself to each change.

2. Check oil level in bearing reservoirs when pumps are idle. Oil level will show low when operating as much of the oil is being circulated. Oiling when the pump is operating will cause overflow. Use a light oil similar to SAE 10 or 20.

3. Never operate with closed discharge valve unless the bleeder line back to source of supply is wide open. Never throttle on the suction side of the pump; this causes increased friction and increases the possibility of flashing on suction side. Capacity should be controlled by throttling the discharge valve or by adjusting the pump speeds.

4. Keep a careful check on suction and discharge gages. At any serious fluctuation, shut down the unit and check for trouble.

5. Never subject the pump to severe temperature changes. Bring the temperature up gradually before starting, and bring it down slowly when taking the pump off the line.

LOCATING TROUBLE:

1. Pump vibration—Check alignment. Trouble may be caused by pipe strain or foundation settling. Check coupling alignment. Alignments should be checked while equipment is still hot. Check bearings.

2. Pump noise—Check suction condi-

BIBLIOGRAPHY OF MAINTENANCE ARTICLES

THE IMPORTANCE of maintenance in mill operation has prompted several of our readers to ask for a list of articles which have appeared on the subject in recent issues of TEXTILE WORLD. Following is a list of maintenance articles which we published during the years 1940–1942. A limited number of over-runs of these articles is available, and as long as the supply lasts we shall be glad to furnish without charge copies of any specific articles requested.

FEATURE ARTICLES

Air Conditioning Equipment, How to Check Up on Condition of . . . Nov. 1942
Buildings, How to Check Up on Condition of . . . Nov. 1942
Card Room Lubrication Schedules, How to Set Up . . Nov. 1942
Card Room Maintenance . . . Aug. 1942
Card Room Maintenance . . . Sept. 1942
Card Room Maintenance . . . Oct. 1942
Combers, Maintenance of Cotton . . . Aug. 1942
Control Instruments, How to Check Up on Condition of . . Nov. 1942
Controller Upkeep . . . April 1942
Electrical Equipment, Upkeep of . . . Mar. 1942
Electrical Equipment, Upkeep of . . . April 1942
Fire-Protection Equipment, How to Check Up on Condition of . . . Nov. 1942
Knitting Machine Maintenance, How to Systematize Nov. 1942
Leather Belts, To Make Last Longer . . . June 1942
Lighting, Maintenance of Fluorescent . . . May 1942
Lighting Equipment, How to Check Up on Condition of . . Nov. 1942
Lubrication of Anti-Friction Bearings . . . Mar. 1942
Lubrication of Cotton Machinery . . . Dec. 1940
Lubrication, What Is the Correct? . . . May 1941
Lubrication Practices . . . Feb. 1942
Maintenance Crew, Eleven Men Handle Repairs . . . Aug. 1941
Maintenance Department Geared Up . . . Nov. 1940
Maintenance Department, How to Organize . . . Nov. 1942
Maintenance Tickler System, How to Establish . . . Nov. 1942
Motor Maintenance . . . Jan. 1940
Painting at Callaway Mills . . . May 1940
Piping and Fittings, How to Check Up on Condition of . . Nov. 1942
Power Generation Equipment, How to Check Up on Condition of . . . Nov. 1942
Power Transmission Equipment, How to Check Up on Condition of . . . Nov. 1942
Shuttles, Take Better Care of . Sept. 1942
Throwing Plant Equipment, How to Conserve . . . Nov. 1942
Twister Maintenance, How to Handle . . . Nov. 1942
Water Treatment Equipment, How to Take Care of . . . Nov. 1942
Water Treatment Equipment, Maintenance of . . . Dec. 1942
Weave Room Equipment, How to Prolong Life of . . . Nov. 1942
Welding, Reclaiming Machinery by . . . Dec. 1941
Wool Scouring Equipment, How to Simplify Maintenance of . . . Nov. 1942

BRIEFER ITEMS

Air Filters, Cleaning . . . Sept. 1942
Belts, Rubber, Protecting from Oil . . . Aug. 1942
Belts, V, Protective Maintenance of . . . Oct. 1942
Cards, Hand, Proper Use and Care of . . . Oct. 1942
Commutator Wear, Correcting Uneven . . . Sept. 1942
Drives, Chain, How to Keep at Top Efficiency . . . Aug. 1942
Fire Extinguishers, Maintenance of . . . July 1942
Fire Hose, Maintenance of . . . Nov. 1942
Fires, Electrical Maintenance Prevents . . . Nov. 1942
Hose, Rubber, Care of . . . Sept. 1942
Intra-Plant Transportation Equipment, How to Check Up on Condition of . . . Nov. 1942
Lighting Equipment, Caring for . . . Oct. 1942
Motor Maintenance, Check Chart for . . . Aug. 1942
Paint Brushes, Cleaning . . . Oct. 1942
Parts, Repair of Broken . . . No . 1942
Rope, Inspection of . . . Sept. 1942
Slasher Quetsch Rolls, Care of Aug. 1942
Stainless Steel Equipment, Conserving . . . Aug. 1942
Transformers, How to Dry . . . Sept. 1942
Twister Worm Gear Unit, Lubrication of . . . Aug. 1942
Valves, Proper Care of Safety and Relief . . . Aug. 1942

tions. Pump should have sufficient suction head.

If pump is found operating beyond the rating point the suction head might be insufficient to prevent cavitation. Check bearings. Check venting of casing, partially closed suction valve, obstructions in suction line, flashing in heater, pump rotation, obstructions in impellers.

3. Low capacity—Check for suction head, temperature of water, partially closed gates in suction and discharge, direction of rotation, obstruction in line or pump; check wearing ring clearances.

New Dyes and Chemicals

Mildewproofing Compounds

Two new mildewproofing compounds suitable for treating military fabrics have been announced by Hart Products Corp., 1440 Broadway, New York. The first compound, Metanol, is used for mold, mildew, and rot-proofing. It is applicable to both burlap and osnaburg. The formula for osnaburg contains proper coloring matter conforming to Government specifications for fastness and shade. There are no solvent hazards. It is non-poisonous and non-flammable. Metanol is said to be effective under all climatic conditions, including that of the tropics. It can be used on cotton, linen, jute, hemp, sisal, and other vegetable fibers.

The second compound, Repel-o-cide is a one-bath agent containing antimildew agents in balanced proportions to meet Government specifications. It is applied to all fabrics by pad, quetsch, or dye-beck. No curing or after-treatment is required. Repel-o-cide is suitable for such types of Government fabrics as ducks, shelter tent ducks, balloon cloth, webbing, denim barrack cloth, camouflage cloth, and percales.

Synthetic Resin for Coating Army Fabrics

Development of a synthetic resin formulation which possesses many of the characteristics of rubber and which is superior to rubber in some properties has been announced by Stanley Chemical Co., East Berlin, Conn. Known as Haydenite, the new compound is composed of polyvinyl butyral resin as the base material. One important application of Haydenite is in the production of Army raincoat fabrics to meet Specification PQD 71C. For coating this type of fabric on one side, two formulations are employed, Haydenite Base Coat 66K-2214 and Haydenite Finish Coat 66K-2215A. Both formulations are olive drab in color. For coating on two sides, a third formulation, Haydenite Back Coating 66K-2221A, is employed for the back of the fabric. The types of Haydenite mentioned above are thermoplastic materials and require no curing operation. Development work has recently been completed on other types of Haydenite, one of which is a thermosetting material which requires curing similar to rubber but which is superior to the thermoplastic materials in waterproofing qualities, resistance to high and low temperatures, durability, and weathering characteristics.

Water-Repellents for Military Fabrics

Two new water-repellents for use on military fabrics have been announced by Jacques Wolf & Co., Passaic, N. J. These compounds, Luposec C. U. and Luposec I. N., are adaptations for military purposes of the company's well-known one-bath repellent, Luposec. Luposec C. U. is recommended for treating summer-weight uniform fabrics, sleeping-bag fabrics, etc., made from cotton, wool, rayon, or other fibers. It can be applied by batch or continuous methods and requires no special equipment. Luposec I. N. is recommended particularly for treating Army duck to meet Government specifications. It is applied in solvent solutions.

Nitroparaffins and Their Derivatives

Commercial production of a new group of chemicals—nitroparaffins and their derivatives—has been announced by Commercial Solvents Corp., 17 East 42nd St., New York. These compounds were developed through the combined efforts of the Perdue Research Foundation and Commercial Solvents Corp. Four types of nitroparaffins are now being produced, and these form the basis for several hundred derivatives. A large number of these derivatives have been evaluated in the textile service laboratory of Commercial Solvents Corp., for use in such varied applications as wetting agents, scouring agents, degumming agents, cation-active finishing agents, mercerizing assistants, kier boiling assistants, and lubricating emulsions.

The four nitroparaffins now available are nitromethane, nitroethane, 1-nitropropane, and 2-nitropropane. Among their applications are as solvents for many organic compounds, including various waxes, tars, pitches, natural resins, oils and fats, and cellulose nitrate, cellulose acetate, cellulose acetobutyrate, vinyl resins, and other film-forming materials. Emulsions of these film-forming materials and other resins soluble in the nitroparaffins are used in the preparation of pigment-printing binders and resin finishes.

Important derivatives of the nitroparaffins are nitrohydroxy compounds, and aminohydroxy compounds. Certain of the nitrohydroxy compounds have been found useful as softening and finishing agents, and as printing, dyeing, and kier-boiling assistants. Five aminohydroxy compounds are now available. These are useful for preparation of emulsions, soluble oils, surface-active agents, soaps, etc. Soaps made from the aminohydroxy compounds are only mildly alkaline and find use in scouring wool, rayon, etc.

Upon heating the soaps of the aminohydroxy compounds, hydroxyamides are formed. The hydroxyamides find application as surface-active agents, softeners, degumming agents, kier assistants, etc.

Several other derivatives have been formed which are useful as wetting agents, scouring agents, and detergents.

Two textile specialties developed by Commercial Solvents Corp. from nitroparaffin derivatives are Amine S and Wetting Agent 5-21. Amine S is a cation-active finishing agent which imparts a soft, mellow hand to textiles. Wetting Agent 5-21 is staple in mild acids, alkalis, and hard water.

Glycerine Substitute

Development of a new compound which resembles glycerine in its hygroscopic properties has been announced by Stein, Hall & Co., Inc., 285 Madison Ave., New York. This material, known as Glyceraid is recommended for use in various textile applications, such as for plasticizing finishes and for replacing part or all the glycerine in vat printing. The function of Glyceraid in vat printing pastes is to prevent excessive drying out during the ageing or steaming of the fabrics, thereby permitting the color to penetrate through the goods.

Things to Come in 1943

They will be flying East—West—North and South, this year. . . More and ever more of them—and the roar of their coming already sounds the approach of doom to our enemies. This is one of the things to come in 1943. As we enter this critical year we are resolved to keep our heads—regardless of what comes—be it victories or defeats. Our job is important to the Textile Industry and to the war effort. We shall keep on working at it harder than ever.

BUY WAR BONDS IN 1943

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New Publications

Dealing with Unions

BACKGROUND AND RECENT STATUS OF COLLECTIVE BARGAINING IN THE COTTON INDUSTRY IN RHODE ISLAND, by Edmund J. Brock; Catholic University Press of America, Washington, D. C.

In this scholarly dissertation, the Reverend Edmund J. Brock traces the economic structure of the cotton industry in Rhode Island and outlines the roles of employers and trade unions. Then, after considering in some detail the structure and administration of the principal unions, he discusses collective bargaining in the cotton weaving, yarn and thread, and narrow fabrics divisions. In the discussion of collective bargaining, agreements between employers and unions are analyzed. Particularly important are the conclusions reached by the author. Some of these in brief are: (1) Collective bargaining in the Rhode Island cotton industry has on the whole been elementary in character and limited in extent and significance. (2) The severe competition which has prevailed in almost all divisions of the cotton industry has had a profound influence on labor problems. (3) Industry-wide organizations of employers and employees—acting in concert and assisted by the Government—are essential if the interests of the worker and the public are to be protected properly and the health of the industry restored. (4) Only to the extent that employers, employees, and Government representatives regulate their mutual relations on the basis of their moral rights and duties will right order be set in the cotton-textile industry and in economic society as a whole.

Theory and Practice of Mercerization

MERCERISING, by J. T. Marsh; D. Van Nostrand Co., Inc., 250 Fourth Ave., New York; $9.

It is nearly 100 years since John Mercer took out his first patent, and it is almost 40 years since a book has been published in English on the subject of mercerization. Meanwhile a vast amount of research has been carried out on the mercerizing of cotton, and numerous improvements have been made in mercerizing processes and equipment for yarn and piece goods. Further, with the growing interest in development of new chemical and physico-chemical finishing processes, the "activating" of cotton with caustic soda solutions has assumed a new importance. The need for an up-to-date book on the theory and practice of mercerization has now been filled with the publication of Mr. Marsh's comprehensive treatise. Included in the book are descriptions of modern methods and equipment for mercerizing yarn and fabrics, and a summation and correlation of the results of research on mercerizing and related processes. The author is widely known in England for his activity in textile research—particularly the development of the original crease-resisting process.

New Frontiers of Research

SCIENCE REMAKES OUR WORLD, by James Stokley; Ives Washburn, Inc., New York; $3.50.

Many who have been disappointed in some of the attempts to describe the progress of science in language of the layman will discover, in "Science Remakes Our World," a source of information which will bring them up-to-date on outstanding developments. Mr. Stokley has accomplished the difficult task of relating in concise but non-technical language what the thing does, what makes it click, and the important steps preceding the practical stage.

For the layman, this book should eliminate many misconceptions derived from piecemeal stories, and the technical reader will find a conspicuous absence of the marvels and the magic characteristics of many popular writings. It should be a "must" for one's library.

New "Yearbook & Catalog"

TEXTILE WORLD YEARBOOK & CATALOG 1942; McGraw-Hill Publishing Co., 330 W. 42nd St., New York, N. Y.

The *Textile World Yearbook & Catalog* 1942 has been issued. The yearbook section contains sub-sections devoted to new equipment and chemicals introduced to the industry since the 1941 edition; mill reference data, consisting of nomographs, charts and tables arranged by branches of the industry; chemical tests for textile men; synthetic fibers, including all the newcomers; a textile bibliography; an index to TEXTILE WORLD for 1941; and lists of textile schools and associations. The special sub-section on "Defects in Woven Fabrics" has been brought right up to date. It now contains descriptions and photographs of 59 kinds of defects with statements as to their causes and suggestion as to application of the group to defects in cotton military fabrics.

The catalog sections contain nearly 250 pages of data on the products of leading manufacturers of textile machinery, equipment, supplies, accessories, dyes, chemicals, etc. As in previously, this new volume contains classified directories of manufacturers of textile machinery and equipment, and of dyestuffs and chemicals.

A copy of the *Textile World Yearbook & Catalog* is sent free to textile mills which may obtain additional copies at $2.50 each. To all others the book is sold at its list price of $5.00.

There's a Cotton Mill, Anyway

BEYOND SURRENDER, by Marian Sims; J. P. Lippincott Co., Philadelphia; $2.75.

Marian Sims, whose growth as an author we have watched with interest, stepped completely out of her element in her newest work, and we hope next time she will keep to her original medium. Accustomed to portraying the flippant, station-wagon society of today, her presentation of the language and manners of three-score years ago is stilted and hard to digest.

She told nothing new. And she failed to tell that well. "Beyond Surrender" is just a Hellywoodian version of the bitter days of South Carolina's reconstruction. We do not want to be unfair, but by the above we mean: her hero comes back to his ancestral home to find it intact, including the family silver, the Sevres china, and the damask drapery; the bottle of Bourbon he has left behind in '61 was still at the half-empty mark; the faithful servants, and the unfaithful were still around; his thoroughbred horse in the stable. After a hot bath and a stiff drink he sat down to dinner as casually as if he had been on a long vacation instead of the long and bloody war of defeat.

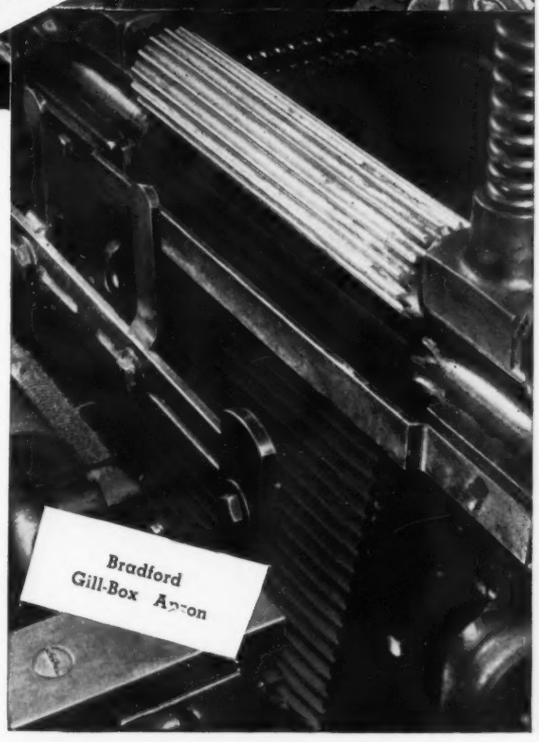
For the next ten years this man struggles with his love-life and his mortgage, neither of which he can handle. The usual Ku Klux Klan, nigger politics, and election tricks are thrown in for atmosphere.

Those who live in South Carolina and thereby are connected with the textile industry may want to read the book for its locale and the brief mention in two paragraphs of the cotton mill which was to be built to redeem Dennis Warden's mortgage.

WORSTED APRONS

FOR BRADFORD COMB AND GILL BOXES

are Fussy Things



Not only must they be of even thickness throughout, have minimum stretch, run straight, and have waterproof laps which are strong, flexible, and of even thickness overall—as in all Barnes aprons—they must provide a certain fussy relation between their surfaces and the wool fibers which they grip. The aprons must grip the wool gently but firmly and carry it forward in just the manner which assures a properly made yarn.

Does it strike you as strange that so many attempts to produce satisfactory aprons from substitutes and even from the best leathers by inexperienced hands have failed? It shouldn't, because the fussy relationship of which we speak can be attained only through long research and many years of experience in worsted problems.

Barnes buys the right leather and gives it the right processing. Our apron leather is tanned from finest Foreign and Premium Domestic Steer Hides in our own tannery, and only the most selective hide area is used, clear of all hide imperfections.

Barnes' aprons are hand processed throughout and are thoroughly seasoned before shipping.

HENRY K. BARNES COMPANY • SALEM, MASSACHUSETTS

BARNES THE *Textile Leather* HOUSE

SINCE 1876

Where unusual knowledge of Leather is combined with long years of Textile experience

APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING

News of Suppliers

Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J., has promoted George B. Chabot, Jr., of its technical staff, to the position of salesman with headquarters in Chicago.

Gill Leather Co., Salem, Mass., has appointed Mrs. W. G. Hamner as representative in the states of North Carolina and Virginia to fill the position left vacant by the death of her husband who had held this representation for the last 17 years. Mrs. Hamner is of a textile family, her father, the late George Gray, being prominent as a pioneer in the development of the southern textile industry.

Warwick Chemical Co., West Warwick, R. I., has appointed David E. York as director of application research. Mr. York was lately with Sandoz Chemical Co. in the Charlotte, N. C., area. Leonard Shapiro has also joined the Warwick research and development staff. He was recently plant chemist at Interlaken Mills, Fiskville, R. I.

Merrow Machine Co., Hartford, Conn. has appointed Hollister-Moreland Co. as distributors of Merrow products in the States of North Carolina, South Carolina, Georgia, Alabama and Tennessee, with headquarters at Spartanburg, S. C.

Solvay Process Co., Syracuse, N. Y. has selected Kings Mountain, N. C., as location for new plant to cost several hundred thousand dollars which will be in operation early this spring. Lee Construction Co. of Charlotte, N. C., is in charge of the building operations, with H. N. Cole, of Syracuse, N. Y., representing the owners as resident engineer. This plant is designed to produce spodumene concentrates and by-products from ore found in the vicinity. Spodumene is the chief source of lithium, compounds of which are widely used in the war effort. The Solvay company maintains a branch office in Charlotte, with H. O. Pierce in charge.

DR. ROY A. SHIVE, of Calco Chemical Division of American Cyanamid Co., who has been called to Washington by the Rubber Reserve Co. to supervise production and development of chemicals for synthetic rubber. Dr. Shive was recipient of the "Modern Pioneer" award of the National Association of Manufacturers in 1940.

A. E. WINSLOW, who has been appointed chief engineer of Atwood Machine Co., Stonington, Conn. He has been with Atwood's engineering department for some time, was previously in charge of Long Draft Division of Engineering of Whitin Machine Works, and prior to that with Saco-Lowell Shops.

Dayton (Ohio) **Rubber Mfg. Co.** has appointed C. D. Bucher as director of purchases for the company. He succeeds J. C. Cunningham, resigned.

American Viscose Corp., New York, has issued a special Licensee Handbook describing all details of its new "Crown" Tested Plan, the fundamental purpose of which is to provide an added incentive for the production of serviceable rayon fabrics containing "Crown" rayon yarns and staple fibers. The handbook is furnished to each firm that is licensed to make "Crown" Tested rayon fabrics.

Mathieson Alkali Works, New York, announces the retirement of John A. Kienle, vice-president and director of sales. Mr. Kienle joined the Mathieson Alkali Works as manager of sales in 1920, and was elected vice-president and director of sales in 1922. Esse E. Routh, lately general manager of sales, succeeds him in both offices, with Robert J. Quinn as his assistant. D. W. Drummond has been appointed general manager of sales.

General Electric Co., Cleveland, Ohio, has promoted George J. Taylor, industrial lighting engineer at GE's Nela Park, to the post of wartime lighting engineer at the company's Atlantic

"E" AWARD MADE TO CROMPTON & KNOWLES

CROMPTON & KNOWLES LOOM WORKS, Worcester, Mass., received the Army-Navy "E" award on Dec. 17. Above is a group of officials who played prominent parts in the presentation ceremony. Left to right—Brig. Gen. Burton O. Lewis, U. S. A.; Governor Saltonstall of Massachusetts; Capt. John J. Hyland, U. S. N. (retired); Mayor William E. Bennet of Worcester; John F. Tinsley, president, Crompton & Knowles Loom Works; Rear Admiral W. Tyler Cluverius, U. S. N. (retired).

What About Your Identity

AFTER THE WAR?

EACH day brings Victory nearer. "Too late with too little" can apply to peace as well as war. Even while the battle rages, today must be our day of preparedness for that inevitable new era when once again the market place becomes the arena.

Mindful of the lessons learned from the past, mindful of new materials, new processes, more efficient machinery, you are looking ahead to the styling, the construction, the manufacture of your new peacetime merchandise. But, do not overlook the importance of protecting your identity.

Textile marking for the protection of the consumer is a matter of law. But relatively few textile manufacturers mark merchandise for protecting their own good names, for insuring their present and future distributing channels, for building reputation.

For over forty years, Kaumagraph has specialized on Identification for the textile trades. The knowledge gained through all these years, during prosperity and depression, during and after World War I, during the present emergency, is at your disposal. Our own research laboratories have always anticipated the needs of tomorrow. They will not fail you now.

Why not ask us to send a Kaumagraph Identification man for a discussion anticipating post-war needs?

Identification Headquarters since 1902

KAUMAGRAPH
Wilmington, Delaware

Dry Transfers
Prestomarks
Embossed Seals
Lithographed packaging

New York Office, 16-22 E. 34th St. · · Representatives in Principal Textile Centers of the World

THE "E" PENNANT AWARDED TO ATWOOD

ATWOOD MACHINE CO., Stonington, Conn., received the Army-Navy "E" pennant at ceremonies on Dec. 1. Above is shown the pennant in the hands of the following: (left to right) F. R. Hoadley, president of Atwood Machine Co.; Capt. William D. Puleston, U.S.N. (retired) who presented the award; Lt. Col. Frank A. Young, U.S.A.; and Richard E. Fritz, representing the Atwood employees.

Division, New York. Devoting the last two years almost entirely to wartime industrial lighting, Mr. Taylor has traveled some 150,000 miles throughout the country, playing a leading role in lighting more than 100,000,000 sq.ft. of war production factory areas. General Electric has appointed E. O. Callander as sales representative for GE wiring materials in Ohio with headquarters in Cleveland.

Harmon Color Works, East Paterson, N. J., has been acquired by the American Home Products Corp., as a wholly-owned affiliate. Harmon's production of pharmaceuticals will be increased, but there will be no interruption or curtailment in Harmon's manufacture of organic colors, pigment dyestuffs and intermediates for the paint, printing ink, rubber, cosmetic and other industries.

Sylvania Electric Products, Inc., New York, N. Y., has appointed Robert H. Bishop, formerly eastern sales manager of the lighting division of Sylvania, to the post of general sales manager of this division. He succeeds Charles G. Pyle who recently resigned to accept an appointment as managing-director of the National Electrical Wholesalers Association, New York.

Flinco Sales Co., New York, has appointed F. J. Moeckel to its organization in connection with distribution of industrial cleansing products. Mr. Moeckel was formerly vice-president of Gotham Hosiery Co.

Aridye Corp., New York, has appointed Chester M. Robbins, formerly sales manager of the Southern Division, to be vice-president with headquarters at the home office in Fair Lawn, N. J. He is succeeded by William B. DePass, who for a number of years has been working with Mr. Robbins in the Southern territory. The service staff in the Southern Division has been augmented by John W. McCalla who comes to Aridye from National Aniline & Chemical Co. Arthur McLean, formerly of Cold Spring Bleachery, has joined the service staff at Fair Lawn. Richard M. Johnson, formerly of Celanese Corp., has been added to the technical staff, and Arthur Booth, lately with the Paterson Vocational School, has joined the Development Laboratories at Fair Lawn.

CHESTER M. ROBBINS, now vice-president of Aridye Corp.; formerly sales manager of the Southern Division.

Howe Scale Co., Rutland, Vt., has appointed H. W. (Warren) Hem, long experienced as an engineer in the field of weighing, as research director. He was previously for many years chief engineer with Toledo Scale Co.

Turner Construction Co., New York, has issued a handsomely illustrated booklet to commemorate the 40th anniversary of the founding of the company. The work for Army and Navy is described and a list of 40 large companies given whose Turner construction jobs run from 4 to 29 each. A table of the annual volume of business handled is also given which runs from $40,000 in 1902 to $68,500,000 for 1942 (as of May 6). Total for the 40 years exceeds half a billion dollars.

Chain Belt Co. has elected A. R. Abelt, secretary of the company, to be a director to replace F. J. Weschler of the Baldwin-Duckworth Division who died in November. Mr. Abelt was also elected a vice-president.

Trundl Engineering Co., Cleveland, Ohio, has elected A. H. B. Jeffords, management engineer with the company for the last several years, to be a vice-president. He will take over administrative duties in the Cleveland office.

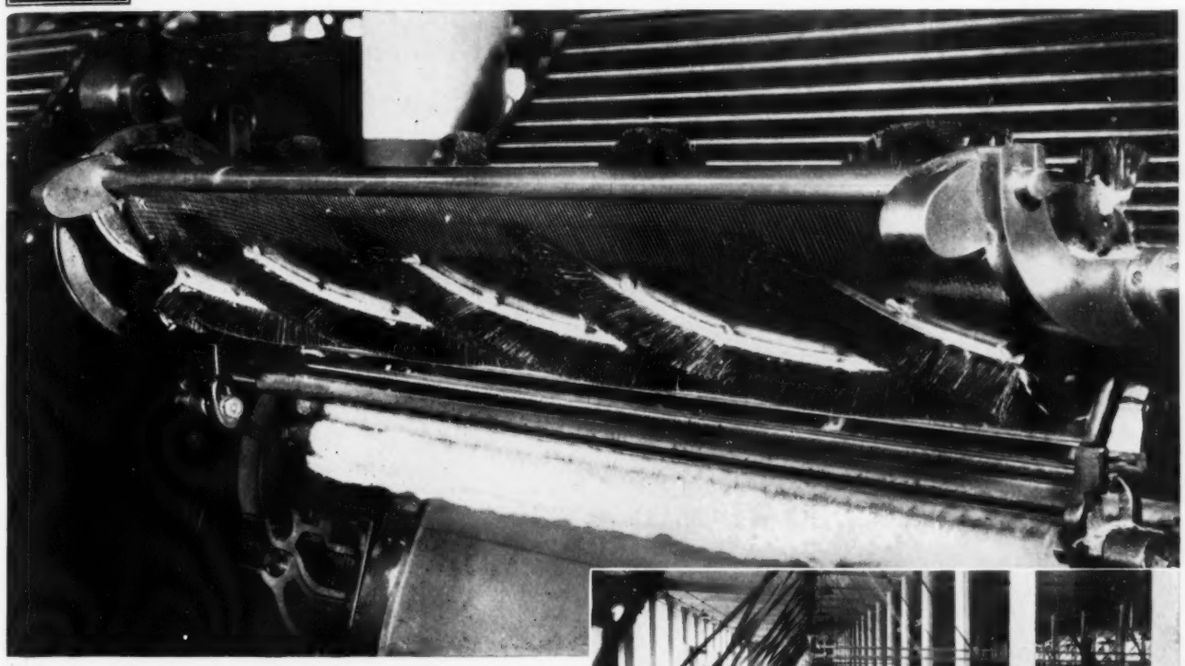
Wheelco Instruments Co., Chicago, Ill., has appointed Roger W. Allen as southeastern district manager with offices at Atlanta, Ga. For the last six years he has been district sales engineer for Foxboro Co. at Atlanta. He is the son of James B. Allen, for 47 years representative of Southern Belting Co. of Atlanta.

"Book 40—Spasm 1"

The above is the characteristically individual notation on the January, 1942, issue of *Parks' Parables* published by Parks-Cramer Co., Fitchburg, Mass. As it enters its 40th year, it devotes the issue to a short and snappy review of the company's background from the time when Gilbert M. Parks started his piping business in 1872, through the entrance of the company into textile humidifying in 1907, the absorption of the business of Stuart W. Cramer in 1918 and the change of name to Parks-Cramer Co., and through the various technical and research developments which have marked the company's history. *Parks' Parables* not only has a long record for a house publication; it enjoys the distinction of having been continuously the work of one individual, Robert S. Parks, and of having as its outstanding characteristic a definite and dynamic personality protruding from it.

FULLERGRIPT BRUSHES

as applied to revolving-flat brushes on Cotton Cards



Mr. Carder: Your own maintenance department can refill your brushes

JUST follow these simple directions:

Remove old brush core. Put it in a lathe. Trim off the old bristles and sand or turn surface to a suitable smoothness. Give it one or two coats of Shellac for hard, smooth surface.

While the core is still in the lathe, mark four evenly spaced spiral lines on the core. Then drill holes for screws and apply the four strips of bristles along the spiral lines. And it's done! Easy, Economical, Efficient.

Over 3000 Cotton Cards Are In Use Today With Fuller Replaceable Brush Strips

THE Fullergript principle, which packs bristles closely together from one end of a spiral to the other, allows no gaps to permit insufficient cleaning of the flat clothing. More thorough cleaning means better carding.

Brush Strips can be replaced quickly even by machine operators, without benefit of skilled mechanics. Both time and money are saved.

Notice the higher tufts at both ends of each strip. These reach the ends of the flats where there is no card clothing and keep them free of dust, oil and cotton wax. The purpose is to prevent formation of those gummy lumps which lift the flats away from the cylinder. Again, better carding.

OTHER TEXTILE-MILL BRUSHES

Yes, indeed, the Fullergript principle has proved successful in other textile-mill applications—thread-dresser brushes, worsted dabbing brushes, burr-picker brushes, finishing machinery brushes, etc. Write us for details of any of these applications—including the cotton-card brush we have described on this page.

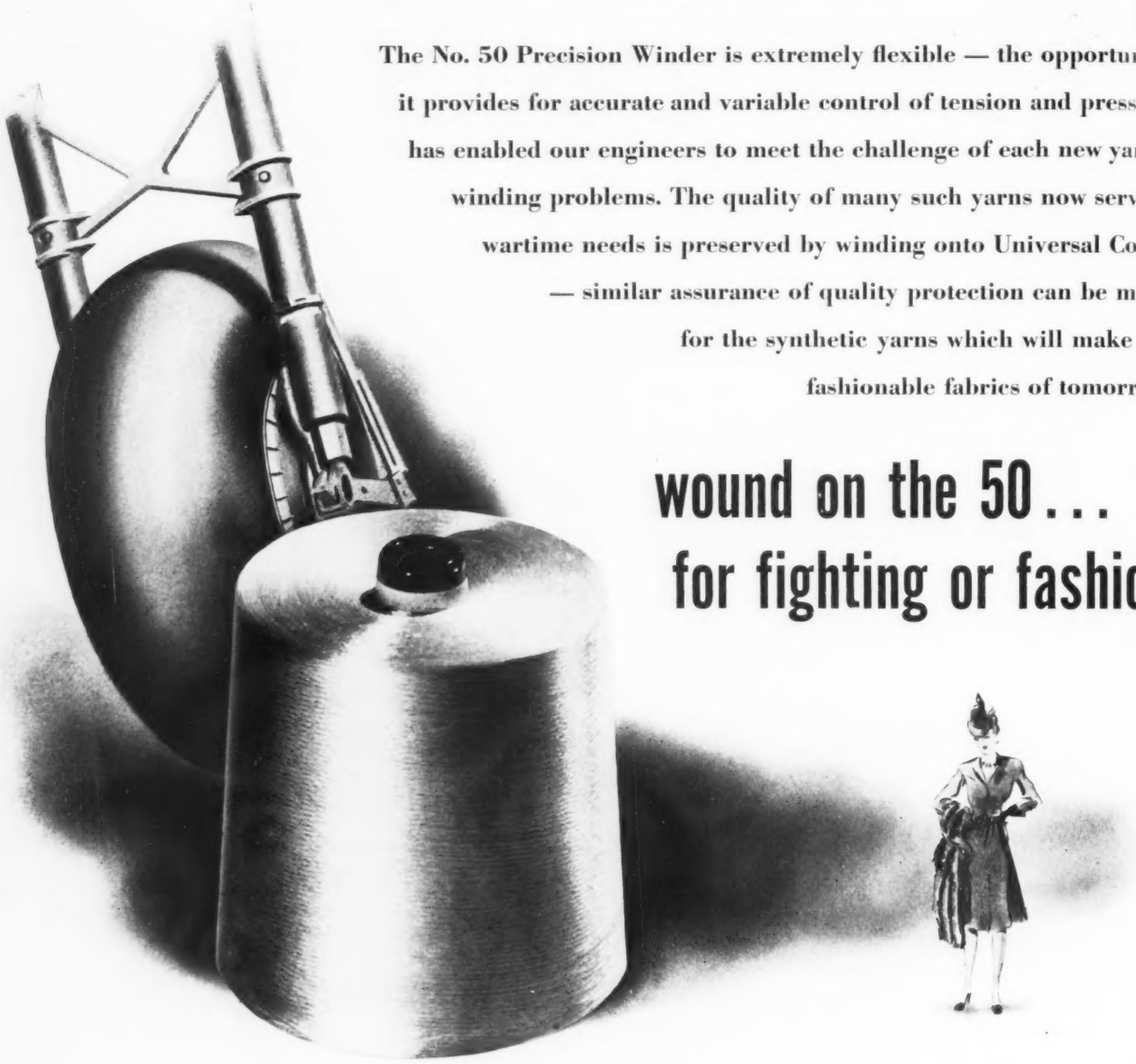
The FULLER BRUSH Company

INDUSTRIAL DIVISION, DEPT. 8C

3594 MAIN STREET - - - HARTFORD, CONN.

OUR VISUALIZATION **of the post-war woman of fashion is only a guess . . . no prediction at all could be made of the fabrics she will wear. But *this* can be predicted: whatever fibres come to the fore in our post-war world, Universal Precision Winders will be selected when those fibres are precise-wound onto cones.**

The No. 50 Precision Winder is extremely flexible — the opportunity it provides for accurate and variable control of tension and pressure has enabled our engineers to meet the challenge of each new yarn's winding problems. The quality of many such yarns now serving wartime needs is preserved by winding onto Universal Cones — similar assurance of quality protection can be made for the synthetic yarns which will make the fashionable fabrics of tomorrow.



wound on the 50... for fighting or fashion

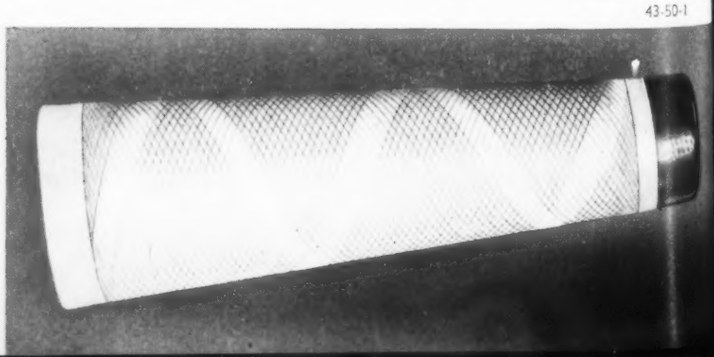
Universal Winding Company

LEESONA REG. U.S. PAT. OFF.

PROVIDENCE
BOSTON
PHILADELPHIA
UTICA
CHARLOTTE
ATLANTA

43-50-1

MORE THAN 90% OF ALL SYNTHETIC YARN IS PRECISE-WOUND ON THE FLEXIBLE 50



THE OVERSEERS' CORNER

SUGGESTION BOX IN THE MILL

A PETE AND BILL DISCUSSION

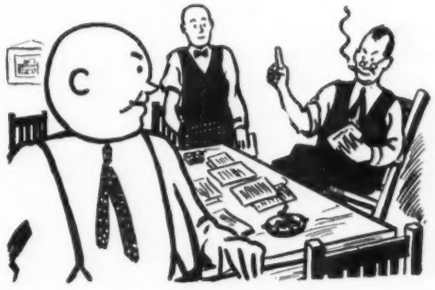
"Pete, don't leave yet, I want you and Hank to stay a minute and discuss suggestion boxes while we're here together," suggested Bill leaning his chair back against the wall of the conference room just as the weekly overseers' meeting was breaking up.

"I've been watching the suggestion system work now for over a year," he went on, "and I think we'd have less jealousy without it. Besides, I am wasting a lot of valuable time going over the suggestions. Very few are worth while, and many workers just use the boxes to register complaints."

"Hank, suppose you tell Bill your experience with old Walter after he got that award for his new loom let-off," suggested Pete good humoredly. "We all know our success on the army twill is due largely to that let-off."

"Well, I should say so!" came from Hank glibly, "and Walt is really proud of his contribution to the war effort. He's one of the most respected fixers we have, his section is on top, and he is always trying to help the other fixers. He's got them all thinking about how to get new ideas to improve their job."

"You know, Bill, my experience is very much like Hank's on these awards for ideas to improve operations," interposed Pete quickly. "Walt's case is spectacular, but several of my operators have won modest awards and recognition, and I believe we have more cooperation and better morale because of the recognition of these worker's ideas."



"Don't leave," said Bill, leaning back in his chair.

"Get out! You fellows just like these fancy systems," growled Bill disappointedly. "Our folks should contribute their ideas anyway, and they just naturally will if they're good for anything. These formal schemes are just wasting our time, and the company's money!"

Do suggestion boxes for employees stimulate good feeling in the mill?

Letters from Readers

To Err is Human

"The Employment Office"
(Pete and Bill, Nov. 1942)

Editor, Overseers Corner:

Of course, there could be some ills in the employment office, but I can agree with Pete that Bill should not take things to heart so earnestly.

'Tis true, we are all human, and there is an old, trite maxim, "To err is human," that must be considered, but "dollars to doughnuts," I'll warrant that when Bill did the hiring it was not always so satisfactory.

In this day of stress, with efficient manpower growing short, Bill must take into consideration that the employment office is confronted with a difficult situation. Sure it is now a problem to get manpower that will always give ultra satisfaction. Bill should remember that we've got a war to win to make freedom ring.

W. M. J. (*Ky.*)

Overseers Can Help

"The Employment Office"
(Pete and Bill, Nov. 1942)

Editor, Overseers Corner:

Evidently the employment office has hired some duds for you, Bill, and you have good cause to spout off about it. There is no doubt that those concerned mean well, though their ability to segregate the good from the bad is an unknown quantity. They probably cause you grief occasionally by forcing you to fire an inefficient operator, something distasteful which might not have occurred if you had done the hiring. It's amazing, too, when you stop and think of the 18-carat references said operator presented when applying for the job.

Like you yourself would do, Bill, we do not put much faith in those references the employment office is usually susceptible to, and moreover, after years

CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing material on these pages or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42nd St., New York.

in the business you are a better judge of just what kind of help you want. Also, it is more difficult for a prospective employee to hand you a cock-and-bull story because you are more or less acquainted with other foremen in different mills and a phone call will give you first-hand information.

Of course, in a mill where it is necessary to have an office to handle applicants, it has been our experience that the person in charge has been willing to get our advice when it comes to the skilled help. It is nice when the office admits they are better off to let the foreman handle cases like this for that procedure leaves them in the clear. We believe you have something on the ball, Bill, but you do not carry it far enough, such as losing that good hand to building number two. You should have run him through the office personally. Why not assert yourself a little more?

K. R. (*Ga.*)

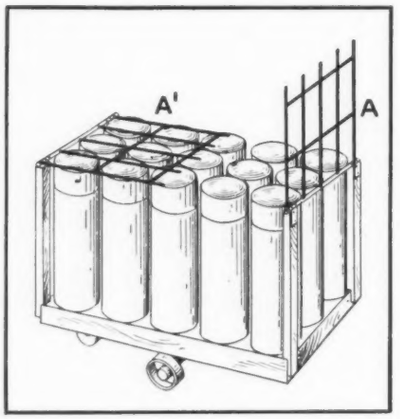
* * *

A. H. COTTINGHAM, general manager of Victor-Monoghan Co., Greenville, S. C., has arranged for copies of *The Greenville News* each Sunday to go to employes of his company now serving in the armed forces abroad. "I believe they will enjoy these weekly messengers from home," Mr. Cottingham stated. "We are glad to do this for the splendid men of our organization who are serving their country on the far-flung battle fronts of the world."

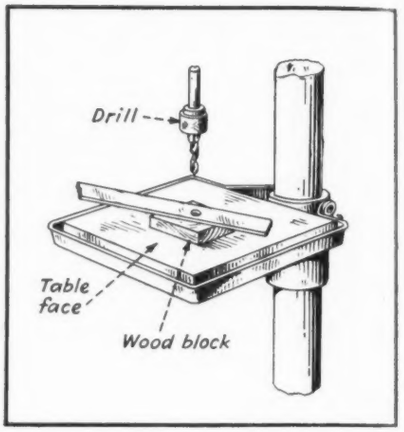
Overseers' Practical Helps

Improved Roving Truck

How many times have your operators hauled roving in the card room and had the soft, fluffy roving fall out of the cans onto the floor? Two hinged covers for the roving trucks may be attached for holding the roving down while it is being moved, thus preventing waste and loss of time. The machine shop can make such a device very easily as illustrated. P.L.H. (*S.C.*)



Special truck for hauling roving. Hinged covers *A* and *A'* prevent roving from falling on the floor while the truck is being moved.



Wooden blocks save a drill table.

Wooden Blocks Save Drill Press

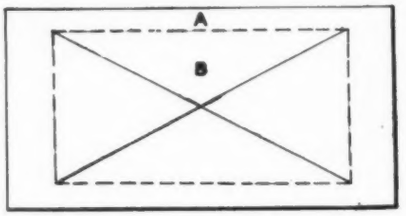
Fixers and mechanics using small power-drill presses often fail to give careful attention to the drill-table face, with the result that most table faces are ruined with numerous holes marring the surface. In order to prevent such unsightly craftsmanship and, at the same time, speed certain set-ups, a set of wood blocks kept near the press comes in handy.

Cut the wood blocks in various sizes, such as a 1x6 in., 2x4 in., and 3x8 in., or in other sizes. When drilling holes through castings, thin steel or picker sticks, etc., a suitable block is first placed beneath the work. As the drill bites through the metal it goes into the wood, thus saving the table face, and the drill. Quite often, it is necessary to drill two holes in a piece, each hole a different depth. The blocks then eliminate the need of lowering or raising the table to a suitable height.

. H. E. W. (*Pa.*)

Bushing Holes With Sheet Lead

Often holes have to be bushed with lead to prevent chafing. A piece of lead should be used that is a little longer



Method of bushing a hole with lead.

RECENT "MINUTE MAN" FLAG AND "T" AWARDS

The Treasury Department's "Minute Man" Flag which is awarded for 100% subscription to war bonds, and the "T" emblem which is given for subscriptions totaling 10% or more of the payroll, have awarded recently to the following firms, some receiving the flag and others the emblem also:

Nashua (N. H.) Mfg. Co.
Saratoga-Victory Cotton Mills, Guntersville, Ala.
Washington Mills, Fries, Va.
Phoenix Hosiery Co., Milwaukee, Wis.
Avondale Mills, Sylacauga, Ala.
Stowe Mills, McAdenville, N. C.
General Hosiery Co., Fort Wayne, Ind.
Manhattan Rubber Mfg. Division, Passaic, N. J.
Frank Ix & Sons, Charlottesville, Va.
Bell Co., Worcester, Mass.
Brighton Mills, Shannon, Ga.
Carolina Mills, Maiden, N. C.
Elliott Knitting Mill, East Catawba, N. C.
Parkdale Mills, Gastonia, N. C.
Wayne Knitting Mills, Fort Wayne, Ind.
Adams-Millis Corp., Tryon, N. C.
Knit Products Corp., Belmont, N. C.
Sylvania Industrial Corp., Fredericksburg, Va.
American Woolen Co.—Mascoma Mill, Lebanon, N. H.; Arden Mills, Fitchburg, Mass.; Sawyer Mills, Dover, N. H.; Ayer Mill, Lawrence, Mass.
Wamsutta Mills, New Bedford, Mass.
Merrimac Mills, Methuen, Mass.
Southern Silk Mills, Kernersville, N. C.
Belding-Heminway-Corticelli Co., Putnam, Conn.
Mills Mill No. 2, Woodruff, S. C.
Union Bleachery, Greenville, S. C.
Granite Finishing Works, Haw River, N. C.
Gay Bros. Co., Cavendish, Vt.
Kenosha (Wis.) Full-Fashioned Mills
Gaymont Mills, Ludlow, Vt.
National Oil Products Co., Harrison, N. J.
Sonoco Products Co., Hartsville, S. C.; Rockingham, N. C.; Garwood, N. J.; Mystic, Conn.; Lowell, Mass.
Ashland Corp., Jewett City, Conn.
Collins & Aikman Corp., Roxboro, N. C.
Saco-Lowell Shops, Saco, Me.
Walter W. Moyer, Ephrata, Pa.
Bassett-Walker Knitting Co., Bassett, Va.
Cartex Mills, Salisbury, N. C.
Hampton Spinning Mills, Clover, S. C.
Parkdale Mills, Inc., Gastonia, N. C.
Balston Yarn Mills, Lincolnton, N. C.
Standard-Coosa-Thatcher Co., Chattanooga, Tenn.

than the hole. Referring to the sketch, *A* indicates the lead *B* the size of the hole. The lead should be cut through along the slanting lines, this will leave four triangles of lead. These should then be pressed back at right angles. It is then placed over the hole. The part *A* should lie flat over the outside. The flaps *B* will go through the hole and to the back. These should then be pressed outwards hard against the walls of the hole so as to hold the bushing firmly and securely bush the hole.

W. E. W. (*Eng.*)

Spinning Rayon Staple

British practice in making spun rayon yarns on cotton system

METHODS AND EQUIPMENT. Equipment for making spun rayon yarns in a mill "somewhere in the north-west of England" completed since the beginning of the war are described in a recent issue of the *Textile Manufacturer*. Below are given some of the more pertinent details regarding machines, settings, etc. Equipment installed is based on the cotton system and is designed to handle rayon staple fiber in lengths up to 2½ in.

For preparing laps for the cards, the following combination of machines is employed: hopper opener, hopper feed, and finisher picker. The grid bars under the beater are reversed with the striking edge to the back, so that they function only as air intake bars. Dust box bars between the beater and the cages are taken out and replaced by a metal sheet, and the loss of valuable fibers is thereby prevented.

For the longer staples, slight modifications have to be made to the stripper rolls of the hoppers and the feed rolls of the scutchers, to conform with the increased length of staple. These modifications are not necessary for the shorter staples. Slow speeds and gentle treatment give the best results and it is recommended that the beater be of the porcupine or Kirschner type.

The standard cotton card has been slightly modified to dispense with the mote knives and the perforated sheet underneath the licker-in and by the utilization of the cylinder grid to permit the standard construction to function as a place for an air intake.

On drawing frames for 1$\frac{7}{16}$-in. and 1⅞-in. staple, four lines of top and bottom rolls can be used when settings will allow this; for the 2½-in. staple, three rows of rolls (top and bottom) are utilized in order to give the required settings. Large roll diameters and not excessive speeds are advised.

On roving frames, normal roller arrangements can be used for staples up to 1⅞ in. provided the necessary settings can be obtained; for the longer staples up to 2½ in., two lines of top and bottom rolls only are utilized drafting from front to back.

In some cases the light-weight, second-line top roller is utilized for fiber control. Here three bottom rolls are employed and three top rolls with the second top roll of light wood, although the drafting is between front and back roller. This light wood roll is not essential, as satisfactory drafting can be obtained by direct front to back drafting without the use of the intermediate roll.

The following twist factors have been adopted with much success: $0.7\sqrt{\text{hank roving}}$ for slubbing; $0.85\sqrt{\text{hank roving}}$ for intermediate frames and $0.9\sqrt{\text{hank roving}}$ for roving.

Satisfactory rovings are also produced by the use of high-draft roving frames with four rows of rollers in two zones and applying drafts up to 35 to draw frame slivers. Staple lengths up to 2½ in. can be processed thus.

In spinning longer staples, the rollers must be capable of being set correctly. These are generally lower than would be the case for cotton, but they vary according to requirements. Yarns have been processed with a twist multiplier as low as 2.5. Compared with cotton yarns of similar counts, the production per spindle of staple fiber yarns is greater, owing to the smaller number of turns per inch. Alternatively, the same production per spindle of staple fiber yarns can be obtained for staple fiber yarns with a lower spindle speed than that used for cotton yarns.

Memories of "Old Man Carelessness"—*By Martha Pittenger*

NO. 1—AN INTRODUCTION

I no longer have so many close friends as I once had in the textile industry. The new generation is less inclined to listen to me. When you think and obey safety rules, I haven't a chance to accomplish my work. At the rate things are going I may be forced to retire altogether. Before that big day comes, I want the men and women of this industry to know what I was in my prime. So I am going to send in my memoirs for publication.

You have been hard on me, you textile workers. Not only am I old, but crippled and bent, in my endeavors to make you as myself. I am poverty stricken, just as I have made my victims all these years. I have been denied the pleasures of life just as they have been denied to many of these victims. I have been over-worked in seeing that you were injured while working. I haven't had a second to think for myself, because I have been too busy creeping into your minds, taking your thought away from your jobs. The only time I have really enjoyed myself, is when I laughed until my sides were ready to split when you got hurt. I clapped my hands with joy when I saw your faces filled with pain, and your bodies tortured in agony.

But I have a great big "Lost-Time Accident" record book, and, by the flickering candle light, I am going to read to you the stories of friends, one by one, whom you may have known before I made my mark upon them.

Yarn Numbers Quickly Determined

By reference to easily produced graphs of size-weight relationship

By BURT W. WETHERBEE
Development Laboratory, Globe Woven Belting Co.

THE ACCOMPANYING CHART represents time- and labor-saving method for those whose work requires frequent and precise determination of yarn numbers based on the weight of skeins of like yardage. It makes immediately available, without calculation, the yarn number, in increments of 0.1, for 120-yd. skeins varying in weight as little as 0.2 grains, within the range covered.

The chart was compiled by a member of our laboratory staff from the yarn-number conversion table given in TEXTILE WORLD YEARBOOK AND CATALOG and in the A. S. T. M. handbook of specifications. We feel that there are many who would save themselves considerable work if they would make out charts, similar to that shown, for the yarn-number intervals with which they work most frequently. The chart reproduced here shows the relationship between grain weights for 120-yd. skeins, and yarn numbers between 7.50 and 8.50, on the cotton system.

In use, one has merely to locate the weight in grains of the test skein in the vertical column of figures, follow across the horizontal line representing that weight until it intersects the oblique graph, then follow down the nearest vertical line until the horizontal row of figures is reached. This will indicate the count of the yarn in question.

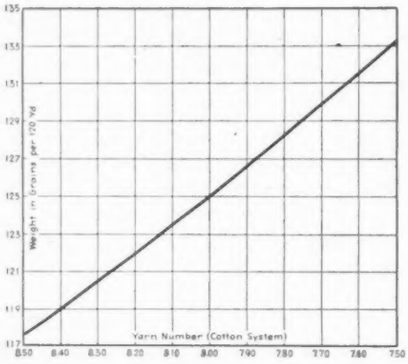


Chart for determining yarn numbers from weight of skeins.

Foremen—Go All Out!

How I, as a foreman, can meet the challenge of an all-out war effort

By LIEUT. HERMAN HEYMAN
Formerly overseer cloth and finishing,
Bevelle Plant, Avondale Mills

BEFORE I DECIDE how I can best meet the situation that confronts us all as a nation today in every line of industry—that of full speed ahead for war—I must know as an overseer just what my duties are, and then I must analyze these duties to find out just how in each case I can accomplish the purpose for which I am striving.

As an overseer just what is my place in the organization for which I work? I have numerous responsibilities, namely:

1. To get the maximum production possible.
2. To make everyone work in a safe way and correct all dangerous conditions.
3. To keep cost at a minimum.
4. To train new workers so that they will become efficient in the shortest amount of time, and at the same time teach them safety.
5. To build up the efficiency of the people already in my department.
6. To give complete cooperation to every department and ask the same of them.
7. To maintain the best of feeling between myself, and each employee; also to maintain the highest respect of the employee for our company and myself.
8. To pick out the right man for the right job, or the job for which he is best suited.
9. To explain the importance of doing the job right the first time and the cost of waste both of time and material.
10. To try to remove any burden from each worker, such as worry, uncertainty as to the future of his job, or anything that would cause him to become bothered and not be able to give his entire mind to his job.

* * *

To keep up production and at the same time keep down cost be sure that all machines are kept in the best mechanical shape and are well oiled, and that the man operating the machine understands his job and appreciates it so that he will get every ounce of production possible. Explain the importance of this attitude to make him proud that he can do his part in the life line of industry.

Training people to work safely is, I think, the most important part of my job. Make them realize that they are the ones that suffer in many ways by being off their job. Also let them know that when they are hurt they delay production by making it necessary to train a new man for the job or putting a man on the job who can not turn out the work that the regular man does. Teach him that every accident should be reported, no matter how slight, and also that all unsafe conditions should be shown up so that they can be remedied.

Cooperation between the departments is one thing that is essential before any mill can operate with any kind of efficiency at all. If I do not cooperate, I hold up someone else, if others do not cooperate with me, they delay me.

In order to work with people and for people, we must understand each other; therefore I must let my employees know just what is expected of them and just what the policy of the company is. We must iron out petty grievances among ourselves and not let little things stand in the way of giving anyone a square deal.

Picking the right man for the job is in itself a great undertaking. If I pick a man that is a misfit for the job I am doing him a great injustice, for the reason that if he is not suited he will never be able to handle the job right, he will be working under a severe handicap. I must keep trying until I find the right man for the right job, and the right job for the right man.

Waste of time and materials is important at all times, but never as great as it is now when everything is needed sooner than it can be produced and all machinery is running every hour possible. Waste of one ounce of material or of one second of time will never be regained under the present conditions.

I must make the conditions under which my employees work the most pleasant possible. Remove doubt and worry where possible, a satisfied worker

free from worry at times like these when we are pushing them for every notch they can stand is "more to be desired than gold, yea fine gold."

May I in closing say this: As I see it, my job today is one of utmost importance in the long chain that leads toward a successful fight for our country. I can do much to help my country and help my countrymen help our country. Good production, minimum cost, well-kept machinery, safe workers, a friendly organization, and—last but not least—a happy people—for all of which I am partly responsible is my answer to the challenge: "How can I as a foreman meet the challenge of all-out war production?"

Beaumont Opens Personnel Bldg.

Complete unit has many features to aid in industrial relations

AN UNUSUALLY COMPLETE PERSONNEL BUILDING was opened recently by the Beaumont Mfg. Co. of Spartanburg, S. C. The ten-room brick building is designed for utmost efficiency in hiring, housing, record keeping, review of terminations, personnel meetings, clinic and nurses' work, and all other functions of an office especially devoted to better industrial relations.

An outstanding feature of the building is its three waiting rooms, one for employees, one for job applicants, and one for the clinic. The building has four separate entrances — for employees, overseers, applicants, and clinic doors. Superintendent, overseers, and second hands may approach the personnel manager's office and not be visible to an employee who may also be waiting for the personnel manager. Another efficiency feature is its central filing room opening into the offices of all assistants and the personnel manager. A system of lights and buzzers informs the staff of visitors or that an overseer is waiting to be seen. The system also connects every office, eliminating unnecessary steps by the office personnel.

Job applicants are interviewed by the assistant personnel manager, investigated, if found satisfactory sent into the mill for interview by the overseer before hiring, and returned for the final interview and instructions to the assistant in charge of hiring. Beaumont operates continuously, and its change from a print cloth mill to a duck mill, now 100% on Government work, has increased its personnel from 700 to about 1,500. This increase has been effected through the personnel department since it began to function in June, 1941.

In addition, this mill has a very highly developed training department, functioning through an assistant superintendent in charge of training, who is responsible with the personnel department for the beginners. The mill maintains about 100 beginners at all times, many of whom are women learning jobs formerly run by men. The twisting department is composed entirely of women. The training department has many meetings with teacher trainers, second hands and overseers, teaching better methods of handling beginners and upgraders.

Due to the drastic changes incident to conversion to duck production, most of the original 700 employees found it necessary to learn new types of work. In the card rooms, the speeder jobs were eliminated and these employees had to learn to spin or operate twisters. In the spinning, spinners and doffers learned to handle coarser yarns and larger packages. The spoolers learned to operate Barber-Colman machines and Abbott winders. The print cloth weavers changed to duck and learned the meaning of "matched pick" weaving, and the fixers learned the operation of midget feelers and Stafford thread cutters. The twisting is an entirely new department which now employs 212 people.

These changes involved many varied personnel problems that were handled in a small space, by a personnel staff that first consisted of one employee. Since July, 1941, five more full-time employees have been added to that office. These six are in addition to the industrial-relations manager of the Walter Montgomery group of mills and her assistants.

PERSONNEL STAFF at Beaumont—(left to right): Bottom row, Barry Hayes, personnel manager; Mrs. Lynda Shiver, assistant personnel manager; Bill Carr, assistant industrial relations manager. Middle row, Annette Duchein, industrial relations manager; Mrs. Anne Russell, assistant personnel manager; Mrs. Rachel Wells, assistant industrial relations manager. Top row, Mrs. Mary Mills, nurse and clinic head; Mrs. Helen Brice, assistant personnel manager.

BEAUMONT'S EMPLOYMENT HOUSE. It has separate entrances for employees, overseers, job applicants and clinic patients.

LOOMFIXERS' MANUAL

WOOL SECTION—Chapter XIV (Continued)—Box Motions

By EUGENE P. SCHREMP

Convertible Box Looms

CROMPTON & KNOWLES W-3 CONVERTIBLE LOOM is so constructed that it may be changed from a 4x1 automatic to a 4x4 non-automatic loom quickly and efficiently. When converted to run as a 4x4 non-automatic, the magazine is disconnected and lifted out of the way over the motor drive, as illustrated in Fig. W28. When converting these looms from one type to the other, the parts not used in the conversion should be stored in a package with the loom number plainly marked. Although most of these parts are interchangeable, with the exception of the single shuttle box which is fitted and then dowel pinned, it is a good practice to use the same parts on the loom from which they were removed.

Box chains should be built so that when the looms are running as 4x1 automatics, only the two box vibrators which raise or lower the shuttle box at the head motion end of the loom are in use.

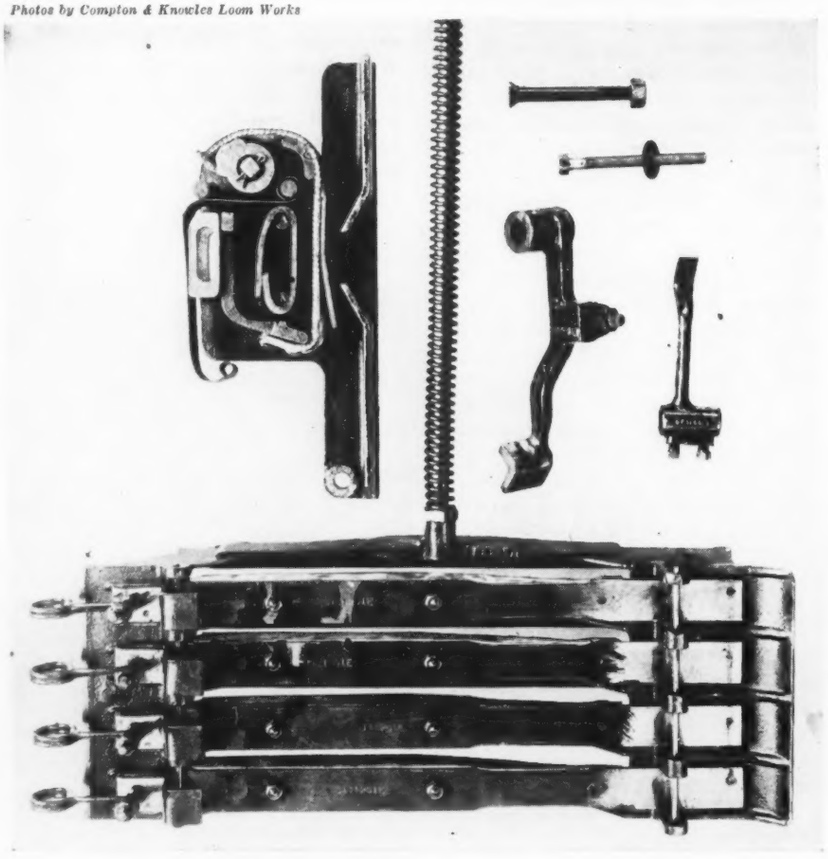
Converting a 4x1 loom to 4x4 box loom requires the parts illustrated in Fig. W29. When changing these looms from one type to the other a definite routine should be followed. Remove the thread holder from the magazine and then disconnect the detector rod at the rod head and cam lever, leaving the stud in the cam lever. The color indication should be disconnected at the magazine and the lever on the arch of the loom. After removing the cap screws that hold the magazine stand to the breast beam, the magazine can be lifted and positioned over the drive, as shown in Fig. W28. The outside bearing, pressure finger, arm and spring on the pick release shaft, must be removed. The single end shuttle box plate is held by capscrews and two dowel pins and should be removed carefully as the dowel pins will prevent it from being pried at only one end.

The protector rod finger must be removed and replaced with the drop-box type. Then, the binder release finger and release arm must be added after the outside box guide is attached, the 4-cell shuttle box with the lifter rod and spring should be positioned, care being taken to adjust the box properly. Apply a Hodgeman check and if pick and pick work is to be run, attach picker balls to each double roll arm.

Fig. W28. Swinging automatic magazine out of position on W-3 Convertible loom (At right).

Fig. W29. Conversion parts to form 4x4 box motion for a W-3 loom (Below).

Photos by Compton & Knowles Loom Works



FIXING HOSIERY MACHINES

FULL-FASHIONED MACHINES—Chapter XVIII (continued)—
The Narrowing Machine

By WALTER A. SIMOND

NARROWING - MACHINE ADJUSTMENT as applicable to leggers was discussed in the first part of this chapter (TEXTILE WORLD, November, 1942). In addition to those suggestions, the following, which are abstracted from the February, 1936, issue of the *Reading Record*, apply to the footer because of its extra narrowing tackle.

"The position of its small combs is controlled by the spring steel ratchet 1 and the steel rack 2, Fig. F53. Therefore, the V point of the ratchet spring must be set parallel to the V notches on the steel rack, which is attached to the rod, otherwise the spring will not fit in the groove of the rack and the rod cannot be held in its correct position. The ratchet spring must exert enough pressure in the groove of the rack to force the rod into the right position and hold it there. The narrowing rod brake must be adjusted in such a manner as to hold the rod or prevent it from moving more than one notch when pushed by the narrowing comb.

[Experience has shown that a clearance of 0.002 in. between the large and narrow combs, at the end of the inward movement, will prevent the momentum of the narrow comb rods from moving the rods too far. (It allows a slight tolerance for any uneven expansion between the small and large comb rods.) Use the same clearance between the end of the narrow finger rod and the incline for the diamond toe narrowings.]

"Incorrect gaging and setting of the covering knives or plates, may be a constant cause of narrowing menders on the footer. The covering knife should be gaged from the tips of the narrowing points to the edge of the covering knife by use of gage No. 5370 for short needle machines or gage No. 3444 for long needle machines, Fig. F54. If the knife is set too low, it will be cut by the sinkers and the results will be fabric cutting and damaged sinkers. The knife should be set laterally on the shaft to cover the same number of points on each narrowing comb when the knife is in operation. Care should be taken that the covering knife does not interfere with a narrowing point transferring a loop. When the covering knives are not operating, they should be held approximately $\frac{5}{16}$ in. away from the narrowing points. The pressure of the knives should be exerted equally on the narrowing points and needles. This is done by allowing the covering knives to settle themselves between the needles and narrowing points in the following manner. Turn the machine into the narrowing until the needles and points engage with full press and then loosen the knives. After making certain that the knives are correctly positioned laterally, tighten them in position. This final setting of the covering knives should be made with the maximum number of narrowing points opposite the knives, in the last narrowing of the foot on the first dip as shown in Fig. F55. The last few footer narrowings are most likely to show the effect of weak covering."

The covering motion on machines equipped with cams A-6516-3 and A-6517-3 should be set in the following manners, according to an erector's bulletin issued by Textile Machine Works: (1) With the roller on the round, or regular work, cam, set the $\frac{3}{8}$-in. steel collar on the vertical operating rod so that it supports the covering knives and holds them $\frac{3}{8}$ in. away from the narrowing points. (2) Turn the camshaft to the position for setting cams. Adjust the hook gage to the narrowing-lift cam setting; hang over the presser shaft in the usual manner; then set the split of the covering-knife cam $\frac{3}{4}$ in. below the tip of the hook gage.

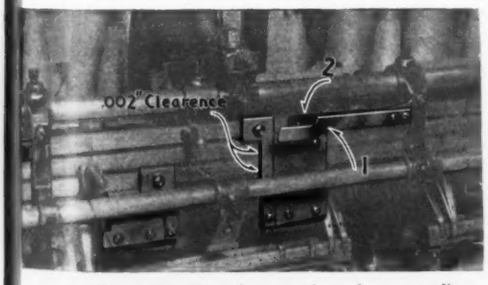


Fig. F53. Ratchet and rack controlling small combs on narrowing machine on footer.

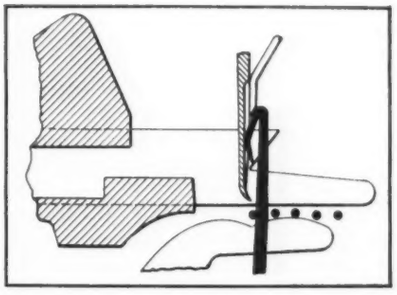
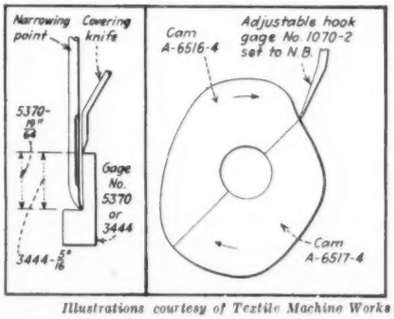


Fig. F55. Final setting of covering knife.

Tighten the cam in this position.

The covering motion on machines equipped with cams A-6516-4 and A-6517-4 should be set in the following manner: (1) With the roller on the round, or regular work, cam, set the steel collar on the vertical operating rod so that it supports the covering knives and holds them $\frac{1}{8}$ in. away from the narrowing points. (2) Turn the camshaft to the position for setting all cams. Adjust the hook gage No. 1070-2 to the needle bar setting; hang over the presser shaft in the usual manner, then set the covering cam (with cam A-6516-4 on top) so that the tip of the gage coincides with the split of the cam as shown in Fig. F56. Tighten the cam in this position.



Illustrations courtesy of Textile Machine Works

Fig. F54 Fig. F56

Fig. F54. Method of gaging covering knife.

Fig. F56. Setting covering motion on machines equipped with cams A-6516-4 and A-6517-4.

QUESTIONS & ANSWERS

Wool Weave Set-Up

Technical Editor:

On a 2560 end, 74 gr. warp, which is best: a 4-harness straight draw with #10 reed—three ends per dent—or a 8-harness straight draw—#7½ reed—4 ends per dent.

The layout for the above warp is on a pin lease reel. What number of sections and what number of neck reed should be used and how should it be reeded? (8880)

Regarding the harness entry, the yarn plays an important part in deciding as to whether a 4- or an 8-harness set should be used. If smooth yarns are to be woven the 4-shaft will give best results. On rough yarns, the 8-shaft is preferred. In place of entering the draw straight, why not use a skip draw? The latter is easier for the weaver and this angle should always be favored. Still another possible set-up is a 6-shaft skip draw, or if thought necessary—a straight draw.

You did not mention the weave and therefore it is difficult to answer your inquiry. If the weave is a twill, then the 4-shaft or 8-shaft must be used. If the weave is tabby, we suggest you use a 6-shaft entry. When reeding, the 6-shaft makes an ideal combination for speeding the job as it can be broken into a true cross for the 3-in-a-dent lease, or can be thrown three-cross for reeding 4-in-a-dent. Concerning reeding, the 3-in-a-dent makes a finer surface during weaving but will have the same appearance as the 4-dent after the cloth is taken from the loom. The 4-in-a-dent reeding allows slubs or other warp-yarn knots, etc., to pass through without breaking. We suggest the 6-shaft entry, 4-in-a-dent reeding.

As no mention was made as to the number of warp ends the reel can take, a basic suggestion can only be passed along. Some mills have a great number of warp ends. If the warp is of solid colors a 500-end count would give you 5 sections of 500 and 1 section of 60. If the warp is a combination of colors, try to arrange the sections so they come equal. This arrangement may require a few more sections, but will prevent possible errors resulting in wrong stripes.

In regard to figuring: Reel ends are divided into warp ends of equal sections. Some warpers prefer the same count as the loom reed for the neck reed and stitch a few scattered dents with an extra end to make allowances for spacing sections. On this count, if you use a 7½-reed, 4-dent count, we suggest a neck reed count of 10, 3-dent. Stitch an extra end every inch. After the neck reed has been stitched, make a short run of a few yards and measure the spread over the roller. The spread should measure about ⅛-in. less than the assumed width in the loom in order to spread it during warping. After a few sections have been warped, measure the width and calculate for additional sections on the same basis to see if your warp width is coming true. Some warpers vary in spacing and if the full beam is ½-in. less either way, excellent results will be obtained.

Cause of Holes In Rayon Hosiery

Technical Editor:

We refer to the Question & Answer in your August issue, "Cause of Holes in Rayon Hosiery." This trouble, to our knowledge, has occurred in quite a number of mills, principally in the Pennsylvania area and everyone is interested in finding out, definitely, the cause.

Your explanation is excellent; however, you have failed to explain the small white spots; that is, why these particular areas have less dye affinity than the unaffected areas.

The damage cannot be detected with the eye, in the grey goods. In some cases, holes will develop when the stocking is stretched on the examining form; but in all cases, on dyeing, the effected goods will contain light streaks, some following the courses in straight lines, others practically round, and still others irregular. The light and white areas are always tender, and the tensile strength of the dyed areas is normal. (8884)

Since there were no holes or tender places in the narrow parts of the four stockings submitted, mildew or mold was thought to be an improbable cause. However, because the light streaks follow the course in places and appear also in spots, mildew seems the most plausible cause of the trouble, at least, in part. When the supply packages or cones of yarn mold in spots or areas, it would result in the "straight line" markings, and if the knitted hose molds, there would be spots with various contours.

From 1897 to 1910 we conditioned the yarn for our full-fashioned machines on the winders; and if, through changes of styles we kept this damp yarn in stock we had some trouble from mold. After we changed to moistening the yarn on the knitting machines, we had no more trouble of this character, except rarely when the yarn was shipped to us too damp.

It is possible that the high temperatures and humidity in the knitting rooms with present-day air conditioning are favorable to the growth of fungi. Less humidity would certainly prevent the present degree of corrosion of the machinery we use.

There are many forms of minute fungi, especially in the great groups of Hyphomycetes and Physomycetes, which form on damp or decaying organic matter.

For prevention, we suggest maintaining temperatures of not over 75°F., and lower degrees of relative humidity in the work rooms, which must be determined empirically.

Travelers Unthread

Technical Editor:

Can you furnish me with information on reasons for spinning travelers unthreading when ends are slacked just before doffing? Any suggestions will be greatly appreciated. (8886)

There are a number of reasons for this condition. Some of the more important are as follows:

1. Type of point. The square-pointed traveler will tend to hold the yarn much better than the round-pointed one. That is why many mills will use the square pointed traveler on filling frames that must be doffed often, and the round pointed ones on warps which require less frequent doffing.

2. Improper circle for yarn being run. Too large a circle should be avoided as this allows the points to drop away from the sides of the ring at doffing.

3. Wrong flange. Sometimes through oversight, the wrong flange will be used, as a No. 2 flange travels on a No. 1 flange ring. If this occurs you get the same condition as with too large a circle.

4. The yarn itself influences this condition to some extent. A rough and irregular yarn will cause more trouble than one of good quality. Also the amount of twist is another factor.

Fabric Defects Charted

In the article, "Fabric Defects Charted," which appeared in our December issue the defects noted as "Filling Stripes" and "Warp Stripes" should be "Filling Strips" and "Warp Strips." These defects are known also as "Strip Backs" or, in combination yarns, as "Skin Backs."

FREE FOR THE ASKING

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

Priorities Regulation No. 3, as amended Oct. 1, 1942, is covered in condensed form in the October-November issue of *Davis & Furber News*, published by Davis & Furber Machine Co. An article entitled "The Growing Importance of Plant Maintenance," contained in the same issue brings out the importance of plant and equipment upkeep while operating on two and three shifts.

A three-shift, around-the-clock schedule in a cotton mill is discussed in the September issue of *Texrope Topics*, published by Allis-Chalmers Mfg. Co. Illustrations accompanying the article show the various processing stages from the lap to the finished fabric used to produce dress goods. The importance of electric motors with V-belt drives in maintaining this production is pointed out.

Cotton duck, its history and development since the days of whaling ships to its present use in assisting the construction of dams, is covered in a 4-page article contained in the December issue of *Oilways*, published by Standard Oil Co. of N. J., Pa., La., and Colonial Beacon Oil Co.

Rayon hosiery oils and their relation to high-twist rayon hose is discussed in the November issue of *The Houghton Line*, published by E. F. Houghton & Co.

Inter-plant transportation is discussed and numerous applications illustrated in the November issue of *The Swirling Column*, published by American Monorail Co.

Welding of stainless steel is discussed in a 20-page booklet issued by Republic Steel Co. Handling stainless steel when it is to be brazed, arc welded, flash welded, gas welded, projection welded, etc. is discussed in great detail. A table setting forth the properties of stainless steel is included.

Drive for rayon slasher is discussed in great detail in the December issue of *Rayon Warp Sizing Specialist*, published by Charles B. Johnson Machine Works. Of interest to textile men may be a photograph appearing in this issue showing a mold used in the manufacture of tires for bombers made of rayon cord.

Maintenance of sewing machine equipment is discussed in the December issue of *The Needle's Eye*, published by Union Special Machine Co. Items such as periodic inspection, cleaning and lubrication are covered in this article.

Identification badges of various types, such as are used about plants operating on defense work, are illustrated and described in a folder issued by American Emblem Co.

A motor finder that may be operated similar to a slide rule is being offered by Allis-Chalmers Mfg. Co. This device permits mill men to select quickly the types of squirrel-cage motors having the requirements necessary to meet various mill installations.

Maintenance and installation of steam traps, along with material covering installation of repair parts and trouble shooting, is contained in a service guide issued by Armstrong Machine Works. Many helpful and useful suggestions are contained in this guide for wartime conservation.

Electric motors, V-belt drives and centrifugal pumps are described in a series of new booklets issued by Allis-Chalmers Mfg. Co. Low maintenance motors — booklet B6052-C—describes the motor characteristics of this series ranging from ½ to 35 hp., along with industrial applications and various designs for special uses, such as those intended for use in the textile industry. Textile V-belt drive —B-6051-C—contains engineering information covering the application of V-belt drives for various industrial uses. Centrifugal pumps—booklet B6059H —contains information covering various types of pumps such as multistage, double suction, single suction, etc.

Reduction drives for textile machines are described and illustrated in a new catalog entitled "American Reduction Drives," released by American Pulley Co.

Talc crayons and other industrial crayons are described in an industrial crayon guide issued by American Crayon Co. Crayons used in textile mills are described such as those suitable for use in cotton, wool and silk mills.

Consulting chemists and chemical engineers are listed in the Classified Directory, Seventh Edition, 1942-1943, issued by the Association of Consulting Chemists and Chemical Engineers, Inc. This directory lists the members by geographical location and also contains a key sheet which indicates the field in which each member specializes.

Welding equipment and accessories such as head protectors, protective clothing, etc., are described in Bulletin GEA-2704B issued by General Electric Co.

Folders describing the Wildman multiple feed rib machine and containing samples of material knitted on this machine are offered by Wildman Mfg. Co.

Setting the bunch builder on winding equipment is discussed in No. 35 of the series *Getting the Most From Winding*, published by Universal Winding Co.

Operation time recorders of the electrical and the mechanical types are discussed in bulletin A-321 issued by The Foxboro Co. Complete specifications of these recorders are contained covering the single and multiple-pen instruments.

Accidents at home and on the highway are graphically illustrated and described in the War Edition of Watch, published by American Mutual Liability Insurance Co.

Air filtration and dust control in various industries is discussed in a booklet titled "AAF in Industry," issued by American Air Filter Co. An interesting table included in this booklet shows the size and characteristics of air borne solids.

Mill maintenance men will be interested in a booklet issued by Black Drill Co. that contains much helpful information about drilling and machining carbon steels.

Prefabricated houses to meet the increasing demand for war housing are discussed in a booklet issued by Upson Co.

Air circuit breakers of a type permitting rapid installation and a quick change of repair parts are discussed in a bulletin issued by General Electric Co.

Data on NE alloy steels is contained in a 30-page booklet issued by Joseph T. Ryerson & Son, Inc. This booklet gives methods of hardening and heat treating steels and has tables covering physical properties of these alloys.

Advantages of a.c. and d.c. arc welders are discussed in a 12-page booklet issued by Westinghouse Electric & Mfg. Co. Numerous types of arc welders ranging from 100 to 500 ampere current ratings are illustrated.

Frequency recorders and indicators are described in catalog N-57-161, issued by Leeds & Northrop Co.

"A Wartime Guide to Plastics," is the title of a booklet issued by Monsanto Chemical Co. This booklet discusses various types of plastics such as those used in the manufacture of the new rubber-like plastic raincoats, being procured by the U. S. Army, various types of moldings, etc. Tables setting forth the physical properties of various types of plastics are contained.

Office records, such as personnel records, allocation and material control, purchase and stores records, etc. are discussed in a booklet issued by Visible Index Corp. This booklet, 101A covers the VISI record system.

Industrial lubrication equipment of various types are illustrated in a 49-page catalog issued by Alemite Division of Stewart-Warner Corp.

Mechanical Picker Again

International Harvester's improved machine said to do work of 50 to 80 hands

TO THE COTTON-GROWING SOUTH faced with an increasing labor shortage the recent announcement of the International Harvester Co. of a new improved mechanical cotton picker brought a ray of hope. However, because of past experience with pickers in the field compared with pickers in the news, the South tempers its hope with a certain amount of skepticism. But Fowler McCormick, president of the International Harvester Co., points out: 'Up to now we have never said we had a successful cotton picker." His company has experimented with mechanical pickers for nearly 40 years.

Several pickers have worked: the Rust Brothers' picker which has done some harvesting each fall beginning back in 1936; the Berry picker; and the International Harvester's previous models. Each machine operated by one man picked a prodigious amount of cotton per day. But the nature of the crop always presented two harvesting difficulties which reflected in the sales value of the cotton: (1) the crop does not mature all at the same time and green cotton which might be picked simultaneously with mature cotton by the mechanical picker will cause ginning and spinning difficulties; (2) mechanical pickers strip some of the foliage off with the lint, thus lowering the grade of the cotton to such an extent that even the best ginning equipment cannot reclaim it. It should be remembered that mills pay a high premium for strict middling and middling cotton.

If the new International Harvester picker has been improved to such an extent that these natural hazards can be overcome, then the South is in for a new era. The labor problem will be solved to a considerable degree and the crop harvested at minimum cost.

The cotton picker is a machine attachment designed for mounting on the Harvester Co.'s medium-sized tractor, which provides the power for the picking operation, and the mechanism of the picker itself is relatively simple.

The picking element of the machine consists of a drum box housing two drums, each containing a series of vertical shafts. On these shafts a large number of revolving spindles, which gather the cotton, are mounted. These gathering spindles enter and retract in the cotton plants at the same forward rate of travel as the tractor itself. As the spindles enter the plant they contact the open bolls of cotton and spin the cotton out of the boll without disturbing the unopened bolls or otherwise injuring the plants. After the cotton fleece is wound on the spindles, it is removed by rubber strippers or doffers.

After removal from the spindles, the cotton is conveyed by vacuum to a separating chamber, and then by air pressure produced by fan equipment to a large wire netting basket supported on a light framework on top of the machine, where it is held until ready to be dumped for trucking to the gin.

When the tractor is used with the picker, the high rear tractor wheels become the front wheels of the machine and the customary forward speeds of the tractor are available for traveling in the reverse direction.

The International Harvester picker has been exhaustively tested in the field in the Delta region in Mississippi and Arkansas, in some sections of Texas, and in the Pima section of Arizona. The picker has harvested in these tests as much cotton in a day as can be picked by from 50 to 80 field hands. A good field hand averages from 250 to 300 lb. of cotton per day and the average wage last season was $1.40 per 100 lb. Figured out in dollars and cents on the above wage rates, the mechanical picker will save the cotton planter at least $130 a day in picking wages since it is estimated that the mechanical picker costs approximately $20 a day to operate.

But it is not yet proved that the possible loss in grade of the crop would not offset that saving. No spinning tests are available on machine-picked cotton. So for all practical purposes the mechanical picker cannot be universally accepted until such tests are made and until they meet the spinners requirements.

The new machine will sell at approximately $3,750. Such a figure would make mandatory a group ownership program among small farming interests, although larger plantations could easily finance such a machine just as they have financed other expensive farm machinery as more and more those places have become mechanized. The larger plantations are those which greatly need a perfected mechanical picker and the operators of such places look forward to the results to be obtained next season from a large scale program of 12 pickers which the International Harvester Co. hopes to have in the field.

International Harvester's cotton pickers working on Hopson Planting Co's. plantation near Clarksdale, Miss., showing contrast between picked and unpicked portions.

Picked cotton being dumped from metal basket into a farm trailer preparatory to being hauled to the gin for processing. It requires about 30 seconds to dump.

More Textile "E" Awards

AMONG THE EVER-INCREASING NUMBER of textile recipients of the Army-Navy "E" Award, a few are represented in the pictures shown on this page. Firms so honored, whose names have not been previously mentioned in these columns, include the following:

Aragon Baldwin Cotton Mills, Whitmire, S. C.
St. Marys (Ohio) Mfg. Co.
Belding-Heminway-Corticelli Co., Putnam, Conn.
S. Froelich Co., New York, N. Y.
Globe Knitting Works, Grand Rapids, Mich.
Hellwig Silk Dyeing Co., Philadelphia
C. H. Masland & Sons, Carlisle, Pa.
Millburn Mills, New York
George C. Moore Co., Westerly, R. I.
Textileather Corp. division of Toledo (Ohio) Dye Works
Lackawanna Leather Co., Hackettstown, N. J.

E. I. du Pont de Nemours & Co., Martinsville, Va., Nylon Plant—(left to right) Lt. Col. Charles W. Kerwood, U. S. A.; C. E. Mears, manufacturing superintendent; Selmar D. Ford, member of the plant war effort committee; Lt. Jacob K. Rader, U. S. N.

Uxbridge (Mass.) Worsted Co.—(left to right) Leverett Saltonstall, Governor of Massachusetts; H. J. Walter, treasurer and general manager of company; Col. Robert C. Brady, commanding Philadelphia QM Depot; Rev. R. B. Wintersteen; Lieut. L. H. Saunders, U. S. N.

Cheney Bros., Manchester, Conn.—(left to right) Maj. Gen. Frank R. McCoy, U. S. A.; Clifford D. Cheney, chairman of the board, receiving banner; (extreme right) Com. R. H. Oliver, U. S. N.

Standard Bleachery & Printing Co., Carlton Hill, N. J. —(left to right) E. E. Poor, Jr., vice-president; Lt. Col. Hodge, Army Air Corps; Lt. C. R. Hoopes, U. S. N. R.; A. G. Poor, vice-president.

P. H. Hanes Knitting Co., Winston-Salem, N. C.—(left to right, front row) Capt. Alfred T. Clay, U. S. N.; John H. Folger, member of Congress; J. Melville Broughton, Governor of North Carolina; Maj. Gen. C. L. Corbin, U. S. A.; P. H. Hanes, president of company; W. Grady Flynn, representing employees.

Jeffersonville (Ind.) Quartermaster Depot—(left to right) Henry F. Schricker, Governor of Indiana; Maj. Gen. Edmund B. Gregory, Quartermaster General; Brig. Gen. Allen R. Kimball, commanding the Depot; Capt. DeWitt C. Redgrave, Jr.; Lieut. Gen. Jacob L. Devers; Brig. Gen. John Polin; Col. N. Butler Briscoe; Col. Martin Ray.

NEWS OF THE MONTH

Simplification Is Major 1943 Hosiery Problem

One of the major problems facing the hosiery industry in 1943 will be the simplification of its product, according to a year-end statement from the National Association of Hosiery Manufacturers. Special committees in each of the industry's five divisions have been working on this subject and their recommendations will receive careful attention of authorities in Washington.

"Whether the year will bring steps in the direction of concentration or not it is difficult to say at this time with definiteness," reports the association. "The concentration of an industry is justified and even necessary if it will definitely contribute to the war effort of the country. This means that there must be evidence that it will save critical materials and result in best use of available skilled help. Other factors that would justify such procedure would be shifting of factory space to war uses, saving of power or storage space, etc. All of these possibilities will be explored in time, and circumstances will govern the decisions."

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Southern Garment Men Meet

Representatives of the Quartermaster Corps, and of OPA, WPB, and other Government agencies, met with the Southern Garment Manufacturers Association at its convention in New Orleans last month and discussed frankly some of the problems which war has brought to that industry.

Col. Robert C. Brady, Commanding Officer of the Philadelphia QM Depot, was unable to attend but sent a message assuring the industry that the War Department is making every possible effort to apply renegotiation in a fair and impartial manner to all contractors alike. He paid a tribute to the cooperation which the industry and its association have rendered to QM.

In answer to a question, Major Robert Dillon, of Philadelphia QM Depot, admitted that a general switch to olive drab for all Army clothing had been decided on. This first came to attention when contracts were released for olive drab underwear shorts. Major Dillon said that the new policy would include shorts, undershirts, handkerchiefs, and all other articles—and that the reason for the change was that when troops in war areas washed their clothing and hung them out to dry, white or colors other than olive drab or khaki gave definite indications of the presence of those troops.

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Urges Cancellation of Trade Shows and Sales Meetings

The Office of Defense Transportation has urged cancellation of trade shows and sales meetings involving intercity transportation, as part of the general program to conserve transportation for more essential war purposes. This request was supplementary to an earlier request from George B. Eastman, Director of Defense Transportation, calling for abandonment of meetings and conventions not contributing in an important way to the winning of the war. It was pointed out that Mr. Eastman's statement applied equally to sales gatherings and trade shows.

QM SCHOOL AT CAMP LEE—M/Sgt. M. D'Alesandro, an instructor in the school, demonstrates the proper method of inspecting garments to a group of trainees of the Clothing and Textile Repair School of Camp Lee's Quartermaster Replacement Training Center.

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Viscose Corp. Files Answer with FTC

American Viscose Corp. filed its answer on Dec. 12 with the Federal Trade Commission to that commission's charge that the corporation's Crown Tested advertising violated provisions of the FTC Act. The reply asserts that a quotation included in the commission's complaint is not a "true, accurate or typical" copy of a single advertisement, but that it is a composite of excerpts taken from two or more advertisements or labels.

The corporation alleges that "from the time of the establishment of the rayon industry in this country in 1910, the corporation has been actively engaged in establishing rayon on a clear and factual basis in the trade and with the consuming public."

The reply continues with the history of rayon's development and promotion including the working out of specifications and standards with numerous groups and associations as well as with the National Bureau of Standards.

"The specifications in the Crown Quality Control Plan," states the reply, "have from the first, been subject to improvement wherever improvement was found possible and practical. Toward this end, in 1937, the corporation cooperated with the Federal Trade Commission in developing rules for fiber identification. The corporation welcomed the opportunity to assist further the clear presentation of rayon to the consumer. In its belief that the Crown Quality Control Plan, with its labeling feature, was an excellent medium for assisting in the establishment of rayon identifi-

cation rules, details of the plan and samples of current tags and labels were given to the commission at that time."

Asserting that "much work has been accomplished" in the identification of rayon, the development of test methods, "and the increase of consumer satisfaction with rayon," the corporation states that it believes the Crown Tested Plan "has afforded a unique instrument for public good," and accordingly asks that the complaint be dismissed.

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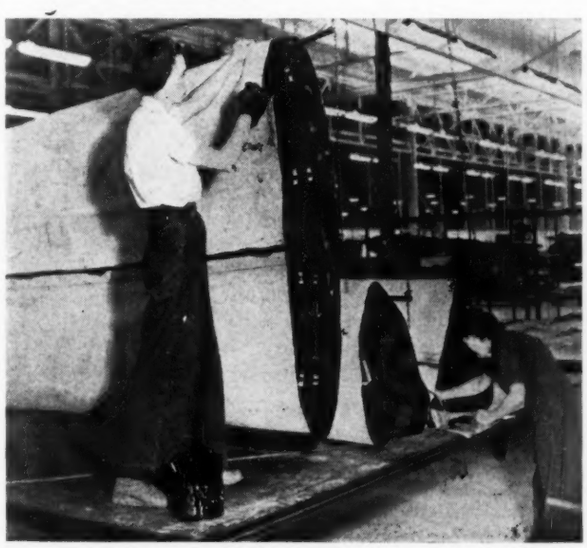
Textile Training Program in N. C.

A plan for the development of a broad program for the training of operating executives for textile mills and for the conduct of research work has been developed by a group of North Carolina industrialists who have organized the North Carolina Textile Foundation, Inc. The present goal is for a fund of $500,000.

The plan was conceived by W. J. Carter, president of Carter Fabrics, Inc., Greensboro, N. C., and is based on the realization that young men with the most thorough kind of textile training will be in demand after the war, and that on those young men will depend post-war textile progress. Mr. Carter was elected president of the Foundation on Dec. 31.

The program will be developed around the textile school at North Carolina State College and will include the addition to the faculty of that school of a man from some well-recognized school of finance; also the addition of a man experienced in personnel management; the appointment of a man in charge of its designing department, who is a recognized leader in that branch of textiles; enlargement of the department dealing with hosiery and other knit goods; and the conduct of research in fiber processing.

Incorporators of the North Carolina Textile Foundation thus far announced include: Charles A. Cannon, Kannapolis; J. Spencer Love and W. J. Carter, Greensboro; K. P. Lewis, Durham; A. L. Harris, Roxboro; O. Max Gardner, Shelby; David Clark, R. S. Dickson, R. Harris Johnston, and B. B. Gossett, Charlotte; A. G. Myers, Gastonia; W. B. Cole, Rockingham; John K. Voehringer, Greensboro; J. E. Millis, High Point; Robert M. Hanes, Winston-Salem; Luther H. Hodges, Spray.



Courtesy Cotton-Textile Institute

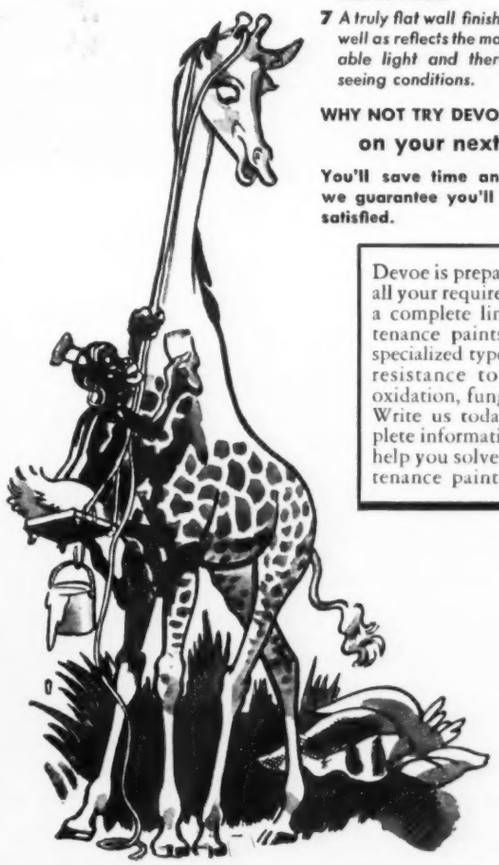
WOMEN IN COTTON WORK GARMENTS are seen at work on bomber fuel tanks, which hold hundreds of gallons of gasoline, in an important plant (U. S. Rubber Co.). Large quantities of specially woven heavy cottons are used to render them self-healing when punctured by bullets.

Astonishing!

HOW DEVOPAKE HIDES AND COVERS ANY SURFACE

"MAINTENANCE"—the watch-word for today when critical materials are scarce and minimum interruptions essential—demands a durable, easy-to-apply wall paint that does the job with just one coat. Devopake, the new paint sensation from the famous Devoe laboratories, answers these demands by giving you *all* these advantages in one coat economy:

1 *Easy brushing—quick to apply. Ideal for spraying.*
2 *Self-sealing primer and finish coat all in one.*
3 *Hides solidly in one coat over any type of interior wall surface.*
4 *Tough enough to stand the gaff of much wear and many washings.*
5 *Spreading quality that actually covers 650-750 sq. ft. per gallon.*
6 *Seven standard colors which may be intermixed to make almost any desired shade.*
7 *A truly flat wall finish that diffuses as well as reflects the maximum of available light and therefore improves seeing conditions.*



WHY NOT TRY DEVOPAKE on your next paint job?

You'll save time and money and we guarantee you'll be completely satisfied.

Devoe is prepared to meet all your requirements with a complete line of maintenance paints including specialized types with high resistance to moisture, oxidation, fungi or fumes. Write us today for complete information that can help you solve your maintenance paint problems.

DEVOE & RAYNOLDS CO., INC.

The 189th Year of the Oldest Paint Maker in America

FIRST AVENUE AT 44TH STREET, NEW YORK, N.Y.

ARMSTRONG Low Cost, Efficient Steam Type HUMIDIFIERS . . .

WHEN you install Armstrong Unit Humidifiers you don't have to disrupt plant routine to make complicated hook-ups. Just connect them into existing steam lines with a minimum amount of critical materials.

Here's what Armstrong humidification will do for you:

1. **Reduce fiber breakage caused by brittleness.**
2. **Make higher production rates possible.**
3. **Reduce waste.**
4. **Reduce fly dust.**
5. **Provide healthier working conditions.**

Armstrong Humidifiers are low in initial cost and operating expense. Units capable of handling 40,000 cu. ft. of space or more list at only $100.00 complete, with all accessories. The steam they use is available in most plants for less than $1.00 per ton. Ask for literature!

ARMSTRONG MACHINE WORKS

872 Maple Street • Three Rivers, Michigan

***WRITE TODAY** for copy of the new bulletin "Armstrong Humidifiers in Industry". It tells how many textile mills are using Armstrong Humidification to advantage.*

ARMSTRONG

BUILT BY THE MAKERS OF ARMSTRONG STEAM TRAPS

DISPLAY IN NEW SHOW ROOM of the Thread Mills in the Merchandise Mart, Chicago, with J. S. Coghill, vice-president of the firm, in charge. The Thread Mills serves as an outlet for Threads, Inc., Gastonia, N. C.

Chenille for Linings?

The bedspread division of the chenille industry can take some comfort from recent developments looking toward the use of chenille as a possible substitute for fleece linings. Jackets and cover-alls have been submitted to the Army, the Navy, and the Air Corps for consideration. While in bedspread manufacture the chenille is usually cotton, there is no reason why it should not be manipulated in wool. The idea was advanced by C. A. Collier, vice-president of Georgia Power Co., in his effort to advance the interests of the hardhit bedspread manufacturers, many of whom are in the State of Georgia. He has had the hearty cooperation of the Tufted Bedspread Manufacturers Association in working out the details of the individual suits, jackets, etc., and preparing sample garments. An examination of one of these garments causes one to wonder if there may be a permanent peace-time interest in this application.

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Stronger Plastics Through Use of Cotton Fiber

A practical method that has been developed for laying a thin sheet of parallel fibers bonded with plastics is described in the December issue of *Textile Research*, official publication of Textile Research Institute, Inc. and the Textile Foundation. Experiments indicate that plastics, with as high as 75% cotton, can be molded from these thin laminations and with resulting tensile strengths comparable to metals in their strength-in-relation-to-weight factors.

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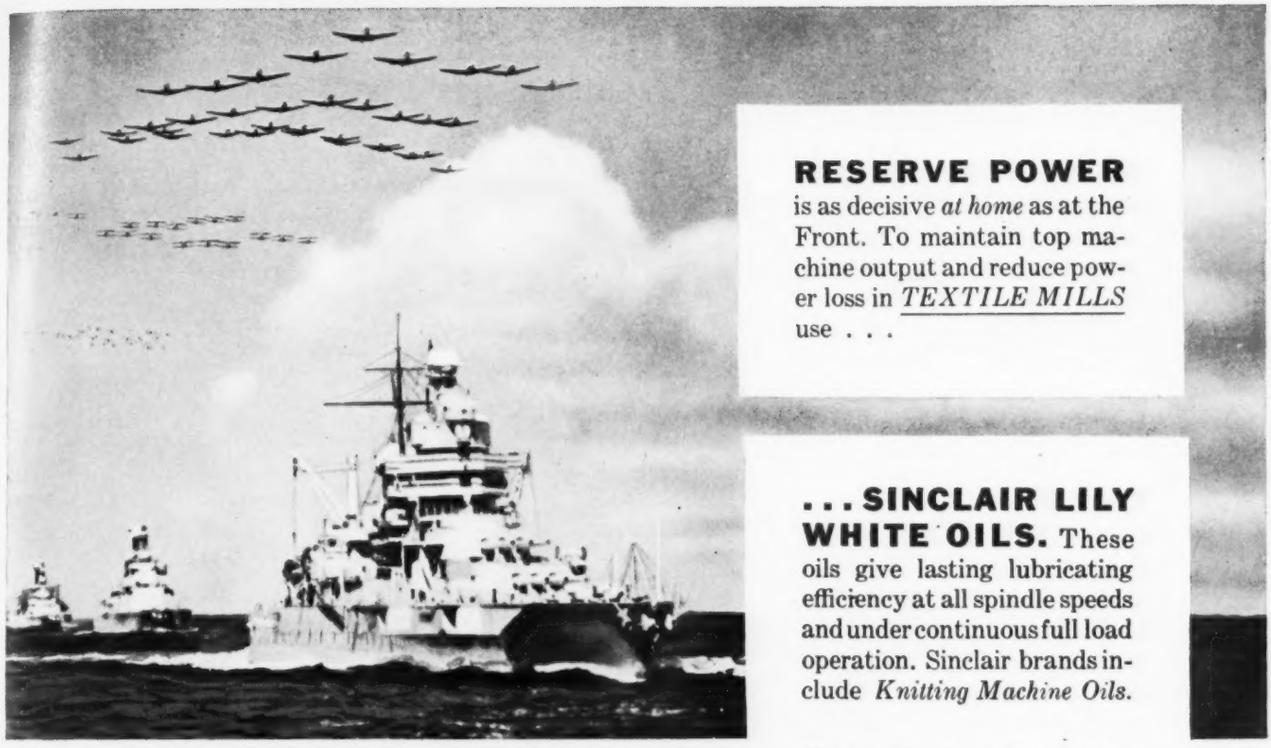
1942 Underwear Output Sets Record

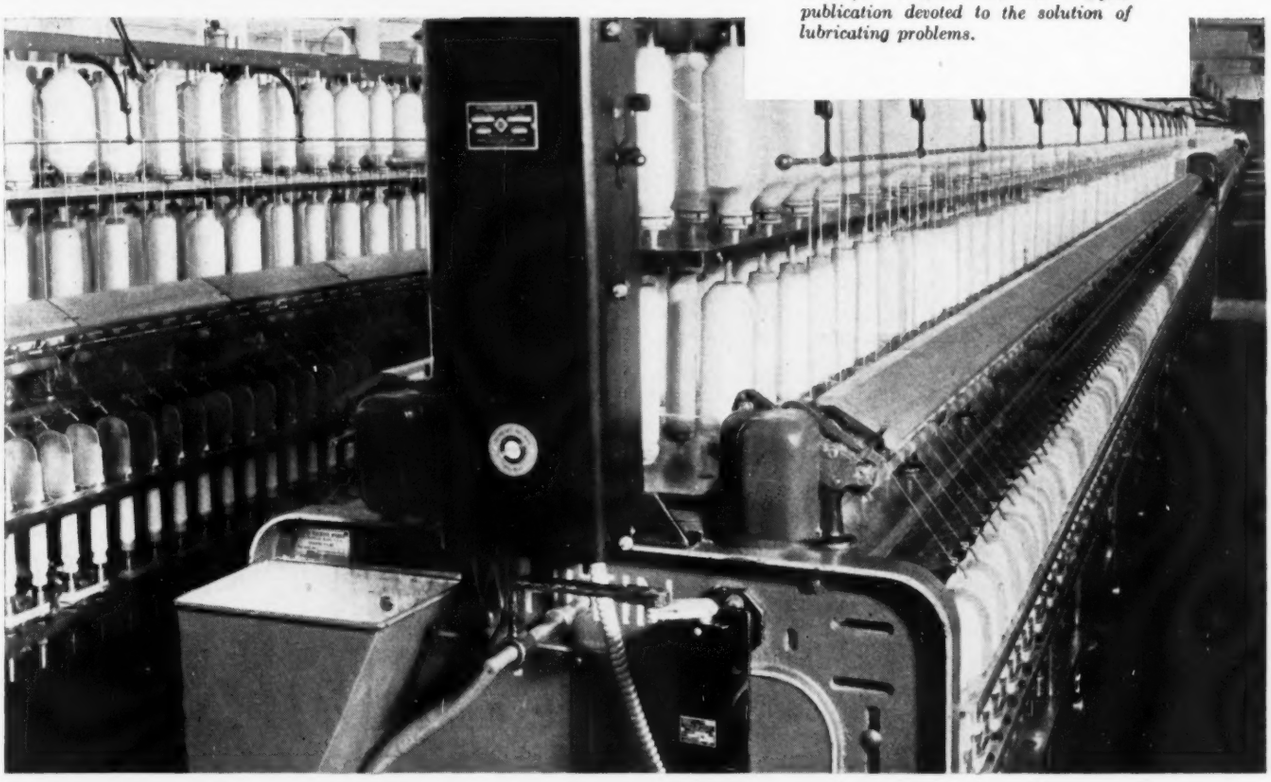
Despite the obstacles involved in underwear production, including scarcity of raw materials and loss of workers, the Underwear Institute estimates that production of all types of knit and woven athletic underwear during 1942 was approximately 60,000,800 doz., which is 7% above the record-breaking figure of 1941, 28% over 1940, and 26% over 1939. While the greatest activity during the year was in the knit and woven athletic branches, which reflect Gov-



RESERVE POWER is as decisive *at home* as at the Front. To maintain top machine output and reduce power loss in *TEXTILE MILLS* use . . .

. . . SINCLAIR LILY WHITE OILS. These oils give lasting lubricating efficiency at all spindle speeds and under continuous full load operation. Sinclair brands include *Knitting Machine Oils.*

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.



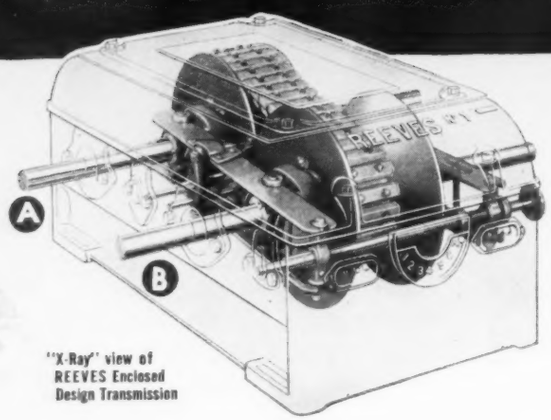
SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE NEAREST SINCLAIR OFFICE

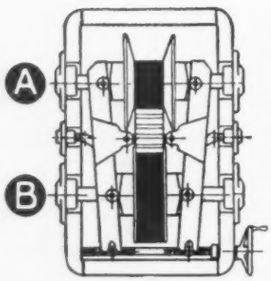
SINCLAIR REFINING COMPANY (Inc.)

2540 West Cermak Road, Chicago • 10 West 51st Street, New York City • Rialto Bldg., Kansas City • 573 West Peachtree Street, Atlanta • Fair Building, Ft. Worth

HOW THE REEVES TRANSMISSION provides complete speed flexibility...

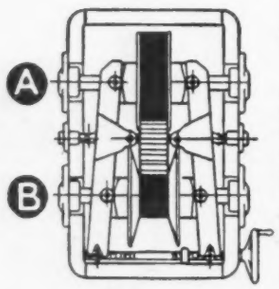


"X-Ray" view of REEVES Enclosed Design Transmission



AT MINIMUM SPEED POSITION

On constant speed shaft "A," cone-faced discs and speed-changing levers are *farthest apart* while the V-belt runs at *smallest* diameter between the discs. On variable speed shaft "B" reverse is true and shaft runs at *minimum* speeds.



AT MAXIMUM SPEED POSITION

On constant speed shaft "A," cone-faced discs and speed-changing levers are *closest together* while the V-belt runs at *largest* diameter of the discs. On variable speed shaft "B" conditions are reversed and this shaft runs at *maximum* speed. Entire range is covered smoothly—no steps or jumps.

★ This time-tested REEVES operating principle for providing stepless speed adjustability is enabling thousands of textile machines to meet new war-time requirements for uniformity and increased output. With REEVES speed adjustability, positive and accurate over full range, machines can be run at greatest efficiency under every changing condition. Write for Catalog-Manual WG-419.

REEVES PULLEY COMPANY, COLUMBUS, INDIANA

REEVES Speed Control

ernment purchasing, production of knit rayon underwear also was high, especially in the warp knit branch.

As for 1943, the Institute points out the difficulty of seeing far ahead at this time. However, it indicates the probability that production of civilian underwear will be materially reduced and adds that this reduction may not be entirely offset by the increase in military requirements for underwear, and consequently the 1942 volume of production may not be exceeded in 1943.

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How to Sell More "Peace" Goods

Pacific Mills have prepared a new sales training booklet entitled "How to Sell More Peace (Piece) Goods" which is addressed to the sales girl behind the yard goods counter, with the particular idea of helping to make her job of war-time selling easier. It also shows how she can help her customers spend money wisely so that essential war materials may be conserved.

The booklet, which will be helpful to sales training directors of retail stores as well as to sales girls, gives complete information about the Pacific Factag Slip. It is the second in a series of war-time booklets published by Pacific Mills. The first—"How Can Informative Labelling on Fabrics Help Me Contribute to the War Effort" was prepared for general consumer distribution.

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"As We Saw It!"

Scheuer & Co., consultants and textile brokers, New York, have issued an attractive booklet entitled "As We Saw It!" containing excerpts from market letters issued by them in the months preceding the outbreak of the war in 1939 until May 1942. It represents a compact record of the company's thinking through these most critical years. In the light of subsequent events, the recommendations and views expressed make good reading.

Among the subjects discussed are: price control, after-war considerations, the functions of industry in the war economy, WPB operations in textiles, ways and means of increasing production, civilian supply, manpower, and inflation. Copies of the booklet may be had on request.

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Hosiery Plant to Make War Products

Penn-Carol Hosiery Co., Concord, N. C., has formed a subsidiary organization known as the Penn-Carol Precision Machine Corp. The latter will begin the manufacture of

U. S. ARMY DISTRIBUTES DIAPERS IN NORTH AFRICA

ATLANTA, Dec. 28—The fellows running the supply services have to think of everything.

For instance, pinned up with equipment for the American invasion forces of North Africa were 60,000 diapers, Frank M. Smith said today.

Explained Smith, deputy director of the War Production Board's Smaller War Plants Division, they were distributed among the natives for good will.

BIG-HUSKY-ACCURATE *is not enough!*

You've got to consider the "X" factor, too!

Sure, we make scales big, husky, and accurate. You've got a right to expect *that* from *any* good scale. But we at Fairbanks-Morse build something else into our weighing machines. We consider in the *design* of our scales—*the* "X" *factor!*

The "X" factor is composed of those things which cause inaccurate weighing, *not by the scale,* but by the men who use scales. In other words, the "X" factor in weighing is the *human* liability of inaccuracy.

Having designed and manufactured weighing equipment longer than anybody else in the world, it is only natural that we should know more about the causes of inaccuracy due to the **"X" factor.**

Consequently, you will find in our scales many little features, such as a pointer which rides *close* to the dial to avoid parallax, and numerals that have been selected for greatest readability. And if you want to completely eliminate the "X" factor, we'll provide a ticket printer which prints an indelible record, automatically.

If you have a weighing problem, or want to speed up your weighing operations, come where there is more experience. Ask Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago.

Fairbanks-Morse Scale Engineers, because they are industrial specialists, can be of greatest service in fitting weighing machinery into your production flow. For weighing while in motion, secrecy in weighing, or automatic operation, ask for their counsel.

FAIRBANKS-MORSE

DIESEL ENGINES
PUMPS
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STOKERS
AIR CONDITIONERS
RAILROAD EQUIPMENT

FAIRBANKS SCALES

Scales

Where Do You WANT THE AIR?

Adjustable outlets make Parks Traveling Cleaners

- MORE FLEXIBLE
- MORE EFFICIENT

Volume of air may be regulated, where the air is aimed may be adjusted. Both air streams may be "spotted" in — or directly down — or slightly out; each side independently of the other.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

products vitally essential to the nation's war effort as soon as the necessary machinery can be installed.

"We had a two-fold purpose in taking this step," said William T. Buck, president of the company. "First comes our natural desire to take part in war production and make use of Otto Z. Smetana's knowledge of machine tools; second, our desire to maintain intact, in so far as possible, our present organization. We shall start the new work in a small way at first, expanding as the need arises.

"If we find it necessary further to curtail our production of full-fashioned hosiery, we shall have a place for our employes who would otherwise be out of work; for it is our belief that almost any knitter can be trained to operate other machines.

"At present, we foresee no such necessity, for we have plenty of raw material and a ready market for our products. But we must remember that we are now living in a war economy, with Government regulations covering nearly everything we do. Therefore, it is impossible to foretell what will happen in only a few months time."

▼ ▼ ▼

AATT Hears About Bubblfil from du Pont Executive

Dr. J. B. Quig, assistant director, Development Section, Rayon Dept., E. I. du Pont de Nemours & Co., presented a paper entitled "Bubblfil" at the December meeting of the American Association of Textile Technologists. "Bubblfil," stated Dr. Quig, "consists of a system of small air pockets firmly entrapped in a film of regenerated cellulose. It is produced in the form of an endless chain of disconnected bubbles, each bubble tightly sealed off from adjacent units." Numerous suggested uses for this product as a substitute for kapok, for incorporation in household goods, and for textile uses were set forth. Photographs showing Bubblfil appeared on page 120 of the October issue of TEXTILE WORLD.

▼ ▼ ▼

This and That

On recommendation of the Underwear Institute, the National Bureau of Standards has submitted for written acceptance a recommended revision of Commercial Standard CS33-32 covering knitted underwear exclusive of rayon. Included in the revised standard are measurements for 27 additional garments which have come into use in the knit underwear industry.

Ways and Means Committee of the House of Representatives was in receipt of a brief submitted by the National Association of Wool Manufacturers through Arthur Besse, its president, which pointed out the dependence of the wool industry on the tariff. The brief related to the recent request by the President for additional executive power over the tariff, and Mr. Besse suggested that Congress give power to suspend administrative features only.

Simplified Practice Recommendation R86-42 covering types of surgical gauze and other gauze products has been issued by the National Bureau of Standards. Copies of the recommendation may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. at 5¢ each.

Carpet industry held its "informal" 1943 opening early this month. Most of the new lines were blends of rayon and wool. Several all-cotton lines were featured. The attendance of buyers in New York was large.

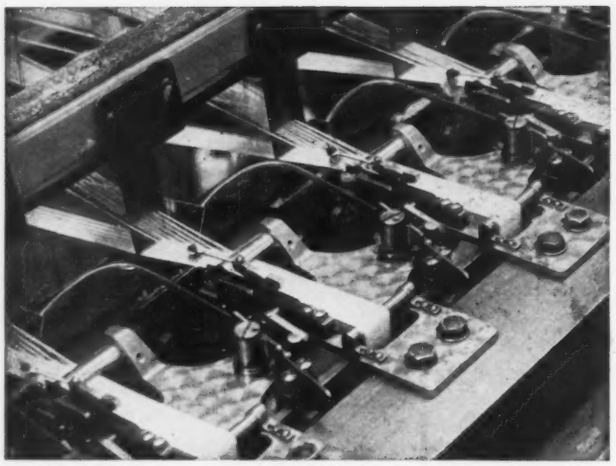
To aid textile manufacturers in determining causes of faults in cotton textiles, the University of Tennessee Fiber

TEXTILE BANKING COMPANY

Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK



CLUTSOM HIGHSPEED WEAVING MACHINES

The Clutsom highspeed shuttleless loom gives high production in a wide range of narrow textile fabrics.

Rigid or elastic webbing, tapes, zipper tapes, venetian blind tapes, rug bindings, ribbons and hospital webs are some of the various items in regular production.

Wages have risen—operators are costly—no material should be wasted that can be saved. The Clutsom machine gives greatly increased production for the same amount of wages paid—cuts material waste to the minimum—no skilled labor required.

A demonstration machine can be seen at this address.

It is possible at present to give limited delivery of machines immediately.

CLUTSOM MACHINES INC.

205 EAST 42 STREET NEW YORK

Telephone MUrray Hill 4-2327

FACTORY: Springdale, Connecticut

Research Laboratory, Knoxville, Tenn. has offered to apply its research facilities to solution of any problem in cotton manufacturing dealing with the physical properties of cotton fiber.

High-tenacity yarn produced by a continuous process is announced by Industrial Rayon Corp. This high-strength yarn will be employed in manufacture of tire cords for aircraft, motorized artillery, and Army transport vehicles.

▼ ▼ ▼

Mills Busy; Markets Slow

Cotton goods sellers have been carrying on limited trading where priority ratings are available which indicate a relatively essential character on the part of the business involved. Granting of an A-2 priority to materials going into women's work garments has made possible considerable business to the converter which otherwise could not have been done. A number of print cloth mills which had been accumulating goods are now able to move them. OPA has clarified the figuring of discounts and premiums on carded cotton yarns. Steps are being taken to permit freer importation of fine count combed yarns from England for hosiery use.

Wool goods trading during December was quieter in men's wear, but somewhat more active in women's wear. From the secondary market, come reports of a large turnover in women's garments and some increased selling of men's overcoats due to cold weather. Business in blankets would be larger if mills could make offerings. Except for blankets already in process, mills can now put only 65% new wool into these items beginning on Dec. 10. Lend-lease operations in wool goods are rising to substantial proportions, including a 21-oz. serge, a heavy overcoating and blankets. Raw wool prices recovered slightly in December from a dip experienced late in the preceding month.

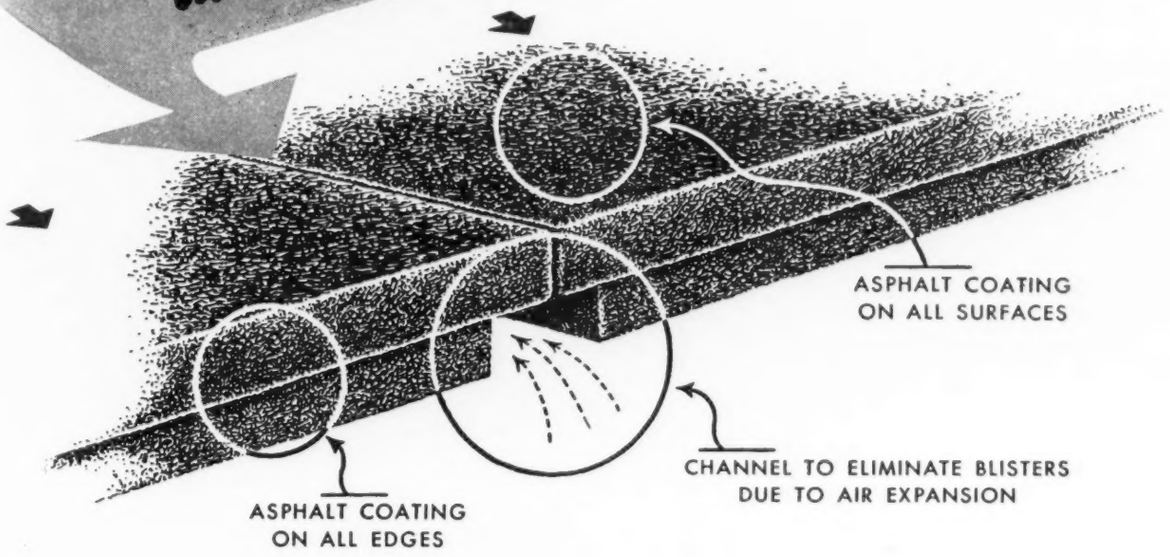
Rayon for general use promises to be much tighter in 1943 than in 1942 since (1) military needs call for considerably more rayon, (2) export plans will be in full operation, and (3) some scarcities in pulp and chemicals may force an actual reduction in total rayon output. As available rayon supplies decline, it is expected that a number of new rayon and cotton combinations will make their appearance where all-rayon fabric was previously the vogue.

Hosiery manufacturers are looking into 1943 with apprehension over the likely reduction in rayon supplies. Efforts will be redoubled to produce the most serviceable hosiery as the possible production diminishes. Most of the hosiery will be of 100-denier yarn, since the finer yarns are already restricted. Another limiting element is the question of manpower. The American Federation of Hosiery Workers reports that there were no more than 62,000 workers engaged in October, 1942, against approximately 92,000 the same month in 1940.

Underwear mills are allocating that part of their production not engaged for military use to their civilian customers as they have for the last several months. Deliveries of the heavier weight garments were rushed to retail counters during the December cold spell and the stocks of these materials are said to be low.

Outerwear manufacturers reported in December that bookings on winter resort lines were good. Sweater demand has been good and a considerable quantity of blended materials have been distributed. The trade is watching the development of wool scarfs and shawls among women as a new fashion trend which may influence the future types of knitted outerwear. Showings of spring lines have been completed in most quarters.

HERE'S THE EFFICIENCY YOU WANT IN ROOF INSULATION . . . *and you can get it* RIGHT NOW!



CELOTEX VAPOR-SEAL ROOF INSULATION
Has a Thermal Conductivity of Only 0.30!

MANY war industries need, now more than ever, the protection of thoroughly dependable roof insulation. And Celotex Vapor-seal Roof Insulation has conductivity of only 0.30 per inch thickness.

What's more, Celotex Vapor-seal Roof Insulation is asphalted on all surfaces and edges, and integrally treated to resist dry rot. It can't get water-soaked if it happens to be rained on while awaiting application. *And* the exclusive, patented channel on all edges provides for the equalization of trapped air and moisture, tending to reduce a common cause of roof blisters.

Use Celotex Vapor-seal Roof Insulation with Celotex Bonded Built-Up Roofs for the ideal combination. Undivided responsibility—both products backed by the world-wide quality reputation of The Celotex Corporation—is your assurance of complete satisfaction. Mail the coupon for complete information.

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Please send complete information on Celotex Vapor-seal Roof Insulation and Celotex Bonded Built-Up Roofs.

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in
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WARP SIZING:

NALEX—for fine cotton yarns

LANAMYL—for worsted yarns

FIBERJEL "V"—for filament viscose yarns

FIBERJEL "SR"—for spun rayon yarns

FINISHING:

FIBERTEX—for sheer, crisp finishes

NAPO GUM—for full, weighty finishes

SPUNJEL—for spun rayon finishes

PRINTING:

AMYLO—for cotton printing (replaces Natural Gums)

VAT GUM #11—for rayon and cotton printing

AMBER GUM (prepared)—for rayons and cottons

All made from domestic raw materials, and available in large quantities.

NATIONAL STARCH PRODUCTS Inc.

820 GREENWICH STREET, NEW YORK

NEWS ABOUT MEN

Robert R. West, for some years president of Riverside & Dan River Cotton Mills, Danville, Va., and lately working on a special assignment for the War Department, has been named president of Esmond (R. I.) Mills, Inc., succeeding **Harold Whitman,** who becomes chairman of the board. Mr. West was graduated from Harvard in 1915. During World War I he served as a captain of infantry in the 89th Division in France. He was later at various times associated with Lawton Mills, Lancaster Mills, and Roxbury Carpet Co.

Michael P. Tully has been elected president of Sale Knitting Co., Inc., Martinsville, Va., succeeding **E. A. Sale,** who has entered the Army as Major. Major Sale was elected chairman of the board.

W. G. Northrup, president of North Star Woolen Mill Co., Minneapolis, Minn., has been named president of the Lima (Ohio) Woolen Mill Co., now a wholly owned subsidiary.

Richard W. Sulloway, president and treasurer of Sulloway Hosiery Mills, Franklin, N. H., has been re-elected chairman of the New Hampshire division of the New England Council.

Louis Stettauer has been elected a vice-president of the Velveray Corp., with plants in Fall River, Mass., and Clifton, N. J. He joined the company about 18 months ago, after 35 years experience in the converting business.

W. T. Dresler has been elected vice-president of Decorative Fabrics Co., Pawtucket, R. I. He is the New York selling agent.

William de Young Kay has been elected treasurer and a director of the Lane Cotton Mills, New Orleans, La.

Percy F. Phillips was guest of honor at a luncheon given by the Textile Square Club, New York, on the occasion of his 90th birthday. Mr. Phillips is still active as a cloth broker, having office space with Sam Leigh in New York.

Charles A. Cannon, president of Cannon Mills Co., Kannapolis, N. C., was host to more than 1,000 employes of his organization, who have 25 years or more of service behind them, at a banquet held Dec. 17. The workers represented five plants and offices in three States. **William P. Jacobs,** executive vice-president of Cotton Manufacturers' Association of South Carolina, was the principal speaker. One hundred and thirty-four newly qualified Cannon employes were presented service pins and insurance policies as the company's tribute to their years of faithful service.

Peter P. Hagan, president of Charles P. Cochrane Co., Philadelphia, was re-elected chairman of the board of trustees of the Institute of Carpet Manufacturers of America for the year 1943 at the annual meeting held on Wednesday, Dec. 16, in New York. New members of the board of trustees for three-year terms are: **John A. Sweetser,** president of Bigelow-Sanford Carpet Co., Inc., **Frank K. Beattie,** president of Beattie Mfg. Co. and **Howard L. Shuttleworth,** president of Mohawk Carpet Mills, Inc. **Leroy A. Beers** was re-elected president of the institute. **King Hoagland** was elected secretary and treasurer.

Joseph Friedland, for many years factory manager of plant No. 7 of the Gotham Hoisery Co., Philadelphia, resigned, effective Dec. 31.

Jack Anderson, of Peerless Woolen Mills was re-elected chairman of south-central section of the American Association of Textile Chemists and Colorists at the annual meeting in Chattanooga, Tenn., Dec. 12. **W. J. Harrison,** of Trion (Ga.) Co., was renamed vice-chairman. Other officers for 1943: **Homer Welchel,** Central Franklin Process Co., secretary; **Marvin W. Moore,** Hosiery Procesing Co., treasurer.

Ernest A. Kirby, formerly production manager for Arkwright Corp., Fall River, Mass., is now supervising purchasing agent for all plants of United Merchants & Manufacturers, Inc., within a 200-mile radius of New York. **Robert Whewell,** formerly assistant treasurer of Arkwright, has succeeded Mr. Kirby as production manager.

W. P. Hamrick, who was for many years general superintendent of the Hampton Division of Pacific Mills, Columbia, S. C., and who was retired by the company, but retained as advisor, has been appointed OPA rent director in the Columbia area.

SABOTAGE ... *from the air*

Sharp . . . jagged . . . destructive! Not bombs. Merely little specks of dust . . . but far from harmless, as high-powered microscopes would show.

It is easy to imagine what damage these hard, jagged particles can do to precision finished bearing surfaces in equipment ranging from delicate instruments to heavy machines. When a highly finished part must be scrapped because of dust-damage, much more is lost than just a piece of metal. Many hours of expensive, painstaking labor are completely wasted.

One of the best defenses against dust-sabotage is air conditioning . . . the specially designed kind of air conditioning which, through efficient air filtering and accurate control of temperature and humidity, is making possible precision tolerances never before attainable.

General Electric has taken an outstanding part in the development of this new air conditioning. Already, the war has taught us how to make equipment more compact, more flexible, and far more efficient. Required "climates" are faithfully reproduced. When the war is over, air conditioning . . . better, cheaper, more universally used . . . will do much to make the world of the future happier and more useful for everyone. Then, as now—General Electric will be a leading source of all kinds of air conditioning.

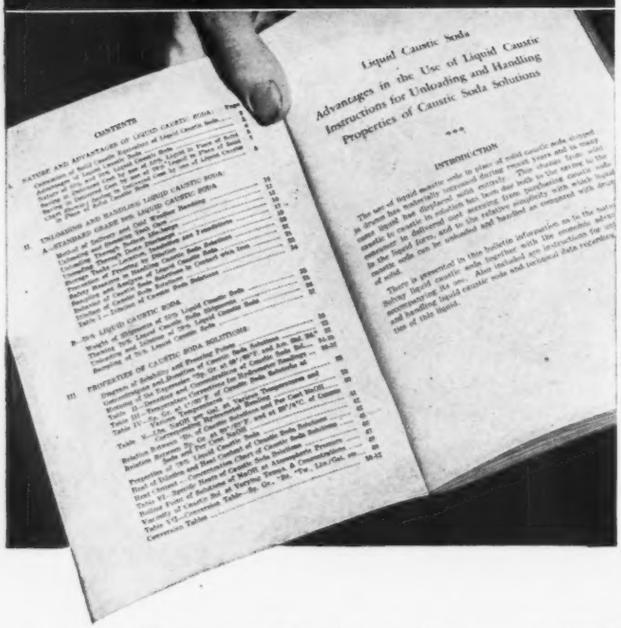
Air Conditioning and Commercial Refrigeration Department, Division 431, General Electric Co., Bloomfield, N. J.

Air Conditioning by

GENERAL ELECTRIC

BOOK OF THE YEAR

...To The Man Who Needs Down-to-Earth Information On Handling Caustic Soda!



If you are a technician or plant operator who is now "taking over" an assignment which necessitates a more specific knowledge of Caustic Soda than you previously required, *then write today for Solvay Technical Service Bulletin No. 6.*

This bulletin contains time-saving, factual information from which all sales talk has been eliminated. It is full of important tables, charts and other data on the handling of Caustic Soda. It is information which goes straight to the point... helps you improve efficiency, reduce man hours and increase production speed.

Solvay Technical Service Bulletin No. 6 on Liquid Caustic Soda is one of the series of Solvay Bulletins which are constantly being revised on the basis of new findings. For years this technical literature has had the recognition of plant operators, engineers and scholars who realize that such vital operations data concerning alkalies can only originate out of the breadth of accumulated experience Solvay has gained as America's oldest and largest manufacturer of alkalies.

If you don't use Caustic Soda, then send for any of the OTHER SOLVAY BULLETINS listed below, which pertain to your work.

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Alkalies and Chemical Products Manufactured by The Solvay Process Company

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Use and handling of Caustic Soda • Analysis of Alkalies • Soda Ash Handling • Alkalies and Chlorine in Water Treatment • Analysis of Liquid Chlorine and Bleach • Water Analysis • Calcium Chloride in Refrigeration Road Surface Stabilization • Analysis of Calcium Chloride and Limestone

NEWS ABOUT MEN

Robert Braun, of Portland, has been elected president of the Androscoggin Mills and Bates and Hill Mfg. Cos., all of Lewiston; York Mfg. Co. of Saco, and Edwards Mfg. Co. of Augusta, Maine, succeeding the late Robert S. Wyman. Mr. Braun has been prominent in the industrial, utility, and banking fields of New England, and was recently active in the reorganization of the Brown Co., Berlin, N. H.

L. W. Hutchins, president of Sheldon, Morse, Hutchins & Easton, Inc., and director of Safety Research Institute, New York, has been appointed chief of the newly organized education unit in the Fire Defense Section of the U. S. Office of Civilian Defense.

Gilbert E. Powell, Greensboro, N. C., attorney, and former judge of the civil division of Greensboro - Guilford County Court, has been appointed a member of the legal staff of the Burlington Mills Corp.

W. M. Babcock, of Talon, Inc., was elected president of the Atlanta (Ga.) Textile Club at the annual election of officers held at the December meeting. He succeeds **K. Harry McGinty,** of J. P. Stevens & Co. For the last year, Mr. Babcock has been chairman of the entertainment committee of the club. The meeting was held at the Atlanta Athletic Club. **William L. Hudson, Jr.,** of Muscogee Mfg. Co., and Reeves Bros., was named vice-president, suceeding **Harry Richardson,** of the Patent Button Co. **J. Louis Lynch,** of Joshua L. Baily Co., was elected secretary, succeeding **Alan A. Clow,** of A. M. Tenney associates, who was elected treasurer. Clow has been serving as secretary and treasurer but by vote of the club the two offices were divided.

R. T. Challman, advertising manager of Munsingwear, Inc., Minneapolis, Minn., has resigned.

Charles F. Pray, a veteran of the Worth Street market, New York, celebrated his 75th birthday on Dec. 11. He entered the industry in 1883, first on the commission house and converting side. In 1902 he went into the cloth brokerage business under his own name.

Tucker McCravy has accepted position of purchasing agent for Pacific Mills Southern units, and will maintain headquarters at Lyman, S. C., plant. His work will be in connection with the plant at Lyman and the Hampton division at Columbia, S. C.

CARROLL D. NEWELL, vice-president of Cyril Johnson Woolen Co., Stafford Springs, Conn., has been appointed chief of the Woolen Unit, Wool Section of WPB, under Kenneth W. Marriner, chief of the section.

Herman P. Good of Wyomissing Textile Industries and the Textile Machine Co., Reading, Pa., has been elected president of the Foundrymens Association at the annual meeting Nov. 19 at the Berkshire Hotel, Reading, Pa.

Miss Julia O'Connell, believed to be the oldest woman employee in duration of service of any textile tile firm, has been continuously employed for 60 years at Winsted (Conn.) Hosiery Co. She is now 74 and joined the company when it began operation in 1882.

Edward A. Weeks, for many years in the cotton cloth brokerage business in New York, is joining the Army Quartermaster Depot in Philadelphia as a civilian inspector of textiles.

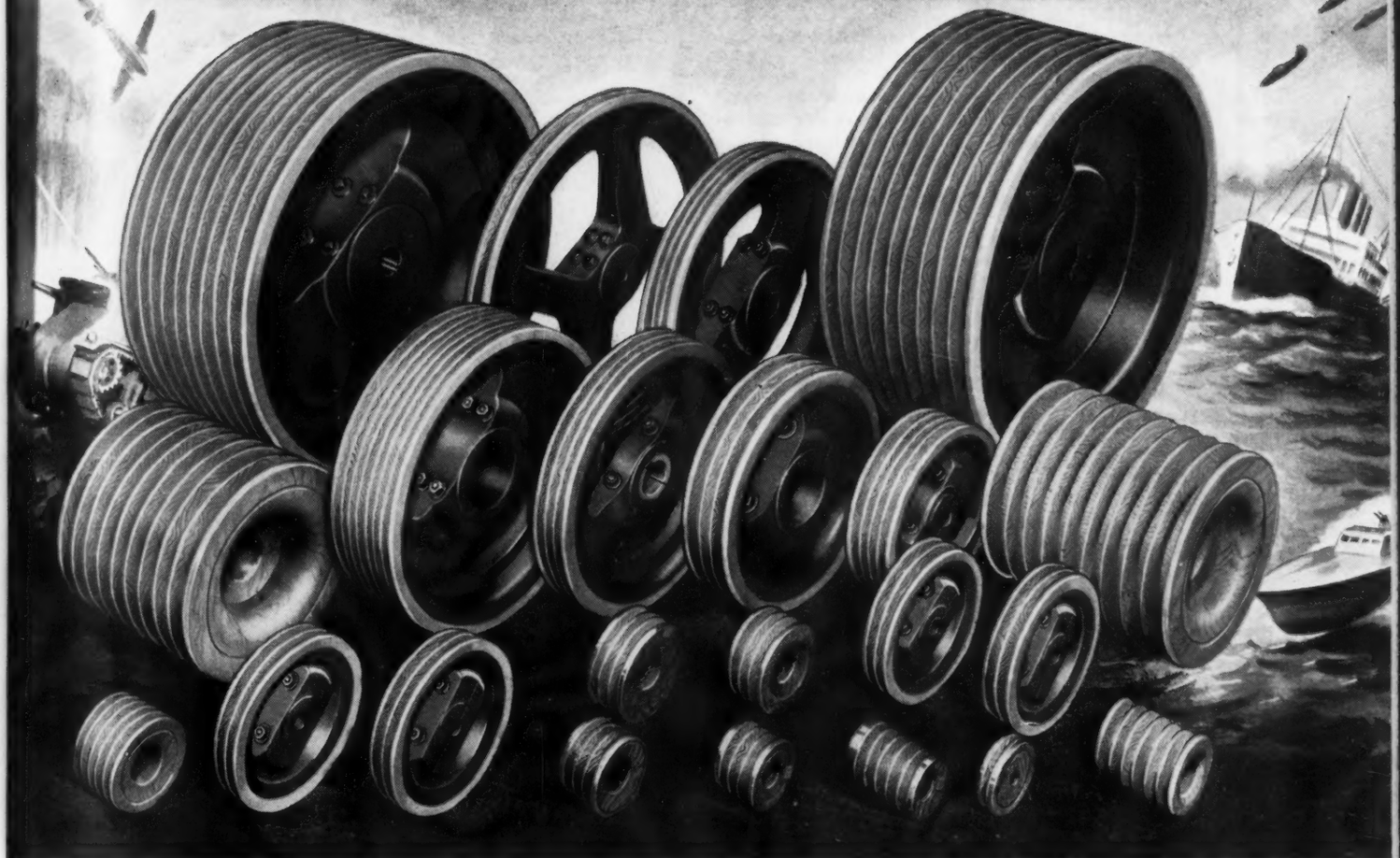
Dan F. Byrnes has been named chief of the Knitted Outerwear Section of the Knit Goods Branch of the Textile, Clothing and Leather Division of WPB. He is president of Byr Kay Co., of Delavan, Wis., and previously had been for many years operating manager of Bradley Knitting Co.

John C. Byk, formerly with Nashawena Mills, New Bedford, Mass., is now Government inspector of textiles, senior grade, with headquarters in Jeffersonville, Ind.

Norman Chadwick, formerly superintendent of Middlesex Spinning Mills, Lowell, Mass., has become superintendent of Armory Worsted Mills, Manchester, N. H.

Thomas H. Johnson, assistant to the sales manager of American Bemberg Corp., New York, has resigned to join the Viscose Sales Division of the

Put All Your Power in the Job . . .
Throw More Scrap Into the Fight By Using
DODGE VICTORY WOOD SHEAVES



DODGE VICTORY WOOD SHEAVES with Dodge D-V Belts get more battle power out of horsepower — save critical materials and machines for use where they can do the most for Victory.

Dodge VICTORY WOOD SHEAVES save metals and vitally needed steel scrap and transmit power just as efficiently as metal sheaves where flywheel effect is not required. They are made from carefully selected kiln dried hard maple and are accurately grooved and finished on special machinery designed for this purpose.

The same inherent characteristics which have been responsible for the successful performance of Dodge Victory Wood Split Pulleys over a period of sixty years are found in the Victory Wood Sheave. They will withstand shock — operate at high rim speeds and are firmly fastened to shaft by means of wood bushings.

The Dodge line of Victory Wood Sheaves is complete and includes a type for every service. They are light in weight — easy to install and low in price.

Your local Dodge distributor can give you prices and complete information on Victory Wood Sheaves. Depend upon him for power transmission appliances to help you put *all* your power in the job of producing more for VICTORY.

DODGE MANUFACTURING CORPORATION
MISHAWAKA, INDIANA, U. S. A.

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BONDS
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THE RIGHT DRIVE FOR EVERY JOB

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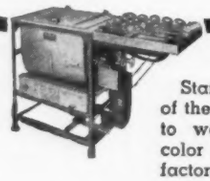
PUT *ALL* YOUR POWER IN THE JOB

ATLAS-OMETERS

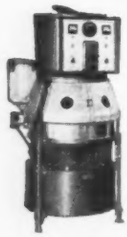
Accelerated Testing Equipment

- Reduce years of actual use to just a few day's testing.
- Required for testing in many Federal Specifications.
- Used in 36 countries—all over the world.
- Recognized by manufacturers and consumers alike for over a quarter-century.



LAUNDER-OMETER

Standard laboratory washing machine of the A. A. T. C. C.—measures resistance to washing action, shrinking, staining, color fastness to soaps and solvents. All factors carefully controlled—can be reproduced exactly at any time.



FADE-OMETER

Rotates specimens around the Atlas Enclosed Violet Carbon Arc, the closest approach to natural sunlight. Temperature automatically controlled.

WEATHER-OMETER

Duplicates effect of actual exposure—months of sun, rain, heat and cold condensed to a few days.

ATLAS ELECTRIC DEVICES CO.
371 W. Superior St., Chicago, Illinois

ATLAS-OMETERS
LAUNDER-OMETER • FADE-OMETER • WEATHER-OMETER

THE TERRELL CLEANING AND HANDLING SYSTEM

The improved TYPE K stripper, Automatic Bobbin Box Hoist and Conveyor Elevator—a modern, compact system for increasing the efficiency and lowering the cost of bobbin cleaning and handling.

The Terrell Machine Co., *Inc.*

CHARLOTTE, N. C.

James F. Notman, Needham, Mass . . . . N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J. . Penn., N. Y. and N. J.
W. J. Westaway Co., Ltd., Hamilton & Montreal . Canada
Geo. Thomas & Co., Manchester, Eng. . . European Agent

NEWS ABOUT MEN

American Viscose Corp.'s New York sales office.

Walter C. Hauer has joined the American Viscose Corp. and will be in charge of the fabric testing laboratory of the company's New York office.

Laurence S. Knappen, economist, has been appointed head of the Economic Analysis Section of the Consumers' Durable Goods Price Branch, OPA.

D. M. Williams has been promoted to general superintendent of spinning mills of American Yarn & Processing Co., Mount Holly, N. C.

C. F. Shepherd, formerly associated with Greenville, (N.C.) Spinners, Inc., has accepted a position with the Spray (N.C.) Cotton Mills and is in charge of time study.

George A. Dyson, overseer of the cloth room of Father George Mills, Sanford, N. C., has been appointed overseer of the weave room also.

Charles Reynolds has become general superintendent of the Spindale (N.C.) Mills, Inc.

B. T. Bumgardner, overseer of carding and spinning department of Globe Mills Co., Mount Holly, N. C., has resigned.

Major Banachowicz has been named president and business manager of the American Federation of Hosiery Workers, Branch 16, Milwaukee. Other officers named are **George Horn,** vice-president; **Mrs. Stella Hartwig,** recording secretary; **Norvel Kossow,** assistant record secretary; and **Oscar Bade,** secretary-treasurer.

J. D. Cassada, superintendent of Edna Mills Corp., Reidsville, N. C., has resigned.

Albert C. Phelps has accepted the position of personnel director of Brandon Corp., Greenville, S. C.

Vance Dearman has resigned his position with Cannon Mills, No. 6, plant, Concord, N. C., and has accepted the position of asistant superintendent of the Randolph Mills, Franklinville, N. C.

A. J. Kelly, chief chemist of Burkart-Schier Chemical Co., is the newly elected chairman of the Southeast Tennessee Chemical Society, succeeding **Emerson Poste.** The other newly elected officers include: **W. T. Watkins,** vice-chairman; **Dr. W. O. Swan,** secretary and treasurer, and **Dr. I. W. Grote,** counselor.

James Oates has resigned as general superintendent of Virginia Mills, Inc., Swepsonville, N. C., and has become night superintendent of Nos. 1 and 2 warp mills and No. 2 filling mill of the Riverside & Dan River Cotton Mills, Danville, Va.

G. H. Lottis has resigned his position of superintendent of Chiquola Mfg. Co., Honea Path, S. C., and has accepted a position in Atlanta, Ga.

Virgil Hall has been promoted to superintendent of Kar-

RECENT CHANGES AT CALLAWAY MILLS

J. H. DAUGHRILL was promoted from vice-president and general superintendent to vice-president in charge of manufacturing.

A. U. PRIESTER, JR. was promoted from technical superintendent Hillside Plant to general superintendent.

W. B. HILL was promoted from superintendent Unity Plant to chief technical engineer.

J. D. TALBERT was promoted from office manager Unity Spinning - Oakleaf Plants to chief staff engineer.

E. O. DEFORE was promoted from chief testing engineer to superintendent Unity Plant.

W. P. COFFIELD, JR. was promoted from testing supervisor to chief testing engineer.

R. F. REDDING was promoted from chairman standards committee to chief control engineer.

S. P. RICE transferred from standards committee to control engineer.

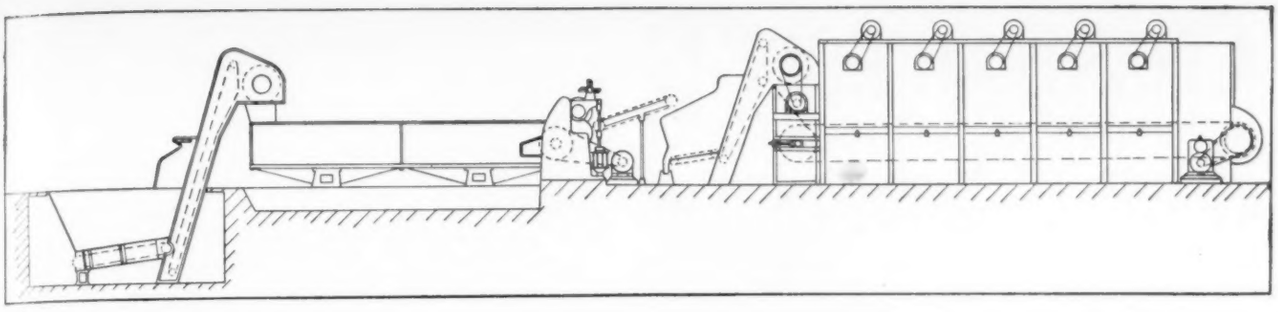
A. ELIAS was promoted from overseer shipping Elm City plant to control engineer.

D. O. BRYANT was promoted from overseer weaving and twisting Unity Plant to control engineer.

JOE HINDS was transferred from standards committee to control engineer.

T. R. PULLEN was promoted from testing department to control engineer.

E. F. PARKER has been executive assistant to the general superintendent and he is now chief cost analyst.



THIS IS THE UNIT FOR CONTINUOUS RINSING, EXTRACTING AND DRYING OF DYED RAW STOCK

THE line cut illustrated on this page shows the Hunter developed and engineered continuous range method of handling stock directly from the Raw Stock Dye Kettle discharge to the Dryer discharge. The method of operation is as follows:—

The Dye Kettle "cheese" is dumped into the Hunter Pit Feeder from where it goes into a Hunter Rinse Bowl which rinses the stock free and clear, through Hunter Pneumatically Operated Squeeze Rolls, and directly into the Stock Dryer. There is no handling between the Pit Feeder and the Dryer.

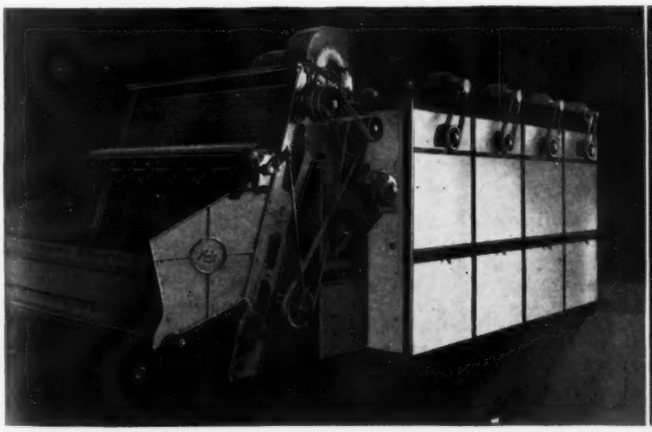
The unit shown above is capable of producing up to 1200 pounds of dyed wool per hour.

After the stock is discharged from the Dryer, it may be either sheeted or blown directly from a hopper to the card room or your stock bins.

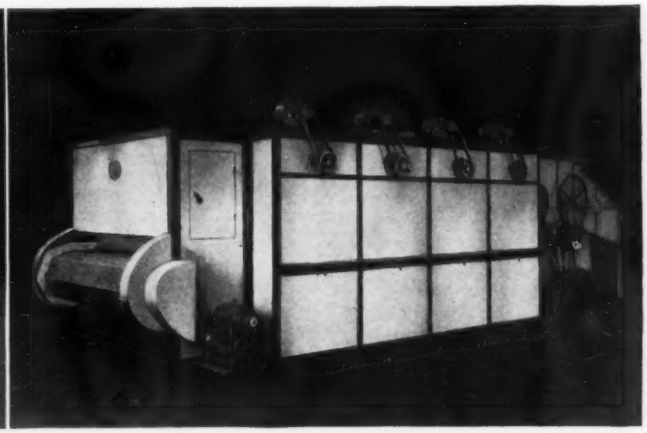
This is the latest and most approved method of handling stock from the Dye Kettles.

Hunter equipment is also available for blending and mixing wools, together with the necessary conveying and blowing systems.

Full details on modern installations on request.



Uniflow Stock Dryer with standard feed



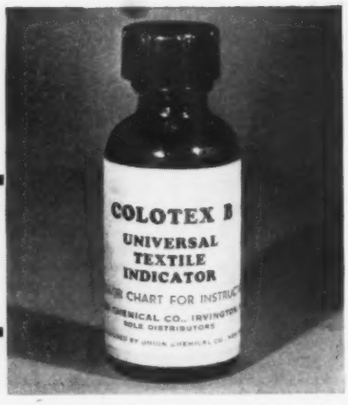
Uniflow Stock Dryer with rotary feed

JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASSACHUSETTS
FOUNDED 1847

COLOTEX B

THE UNIVERSAL TEXTILE INDICATOR

FOR NATURAL AND ALL SYNTHETIC FIBRES



Just Dip It . . .
Dry It . . .
The COLOR is the Answer

An ALL-AMERICAN product, always in stock, readily obtainable. Simply immerse bleached fibres in Colotex B liquid, rinse and dry, and compare shade with *Color Chart* supplied with Indicator. Specific and positive color reaction in one immersion, identifying any textile fibre, including NYLON, ARALAC and VINYON, whether in the form of single or mixed fibres. COLOTEX B can be used again and again until exhausted.

• *Send for 1 oz. Test Bottle*
Price **$2.00** *Also sold in 4 oz. Bottles*

McCABE CHEMICAL CO.

Manufacturing Chemists

IRVINGTON, NEW JERSEY

We invite your attention to our other products for the textile industry: MIRACLE WHITE PIGMENT (for discharge printing) • TEXTILE FINISHES • • SCOURING AIDS • BOIL-OFF COMPOUNDS • GOVERNMENT SPECIFICATION FINISHES T-1212, CCC-D-746, EBP—1708.

SHAMROCK

Canvas **Baskets, Trucks**

Speed-up production—Keep 'em rolling

Ask your Jobber TODAY! **MEESE, INC. Madison, Ind.**

astan Rug Mill, Leaksville, N. C.

Foster Ellingwood has become superintendent of Lawrence Blanket Mills, Webster, Mass. He was formerly with American Woolen Co.

Joseph Ward has resigned as overseer of spinning for Lymansville Co. to assume the same position at Peace Dale (R.I.) Mills.

J. H. Cranford, formerly of the Clinton, S. C., mill, has become assistant to the overseer of carding at the Springstein plant of Springs Cotton Mills, Chester, S. C., second shift.

J. B. Powell, has accepted position of night superintendent of Erlanger Mills, Lexington, N. C. He was formerly overseer of cloth room of Drayton (S.C.) Mills.

O. A. Sullivan has resigned his position as a departmental head at the Hartwell (Ga.) Cotton Mills, and has accepted a similar position with Jackson Mills, Iva. S. C.

J. D. Burton has accepted position of overseer of spooling of Kendall Co., Pelzer, S. C. He was formerly with Mooresville (N.C.) Cotton Mills and the Mathews Mill, Greenwood, S. C.

Textile Men in Armed Services

Robert S. Stevens has been promoted from lieutenant colonel to colonel. He is assigned to the Quartermaster General's Office in Washington and will act as chief of the Textile and Textile Equipage Division and also as chief of the Clothing and Leather Section. He was formerly president of J. P. Stevens & Co., New York.

Edward O. Buhlman has been promoted to the rank of captain in Army Quartermaster Corps. He is the contracting officer and the officer-in-charge of the Woolen Cloth Section of the Procurement Division at Philadelphia QM Depot.

William E. Shinn, member of the Textile School faculty of N. C. State College, Raleigh, N. C., has been commissioned a major and assigned to Chemical Warfare Center, Edgewood Arsenal, Md.

John Plenge, of the shirting department of Pacific Mills, New York, reported for military service last month at Fort Dix, N. J.

William A. Kaliff, of Bernard Bernstein Textile Co., New York, is now 1st lieutenant in the Army, stationed at Fort George Meade, Md.

Michael Gould, for many years with E. E. Berliner & Co., New York, N. Y., has been inducted into the Army.

Peter Barton, son of George Sumner Barton, president of Rice, Barton Corp., Worcester, Mass. and associated with his father in that business, has enlisted as an aviation cadet in the Army Air Force.

Harold E. Emrich, of Joshua L. Bailey & Co., and formerly president of the Textile Credit Associates, has been in the Air Force since September and is now located at Mitchel Field, L. I.

ALBERT E. DENNIS has been promoted from major to lieutenant colonel, Quartermaster Corps. He is officer-in-charge, planning and control branch of the procurement division, Philadelphia QM Depot.

William Van D. Jewett, general manager of the former Farr Alpaca Co., Holyoke, Mass., for several years, has been commisioned a major in Marine Corps.

Benjamin Cone, Greensboro, N. C., vice-president and treasurer of Cone Export & Commission Co., is now serving in the U. S. Naval Reserve, with rank of lieutenant.

Asher L. Joslin, who has been southern engineer for Crompton & Knowles Loom Works, with headquarters in Charlotte, N. C., for the last five years, is now on active duty in the U. S. Naval Reserve, with the office of lieutenant, junior grade.

Sydney H. Jacobs, former proprietor of the Shirley Knitting Co., Brooklyn, N. Y., has

Carbomatic gas-fired radiant-heat burners installed in front of dryer increase its output.

Drying Operations Are Speeded Up

At Progressive Silk Finishing Co. by use of gas-fired radiant-heat generators

FACED WITH THE PROBLEM of speeding up drying operations on military and other fabrics, Progressive Silk Finishing Co., Hoboken, N. J., has turned to the use of Carbomatic, gas-fired, radiant-heat generators to increase the capacity of drying equipment already in place. To date the company has installed these gas-burning generators on three different types of equipment and is now planning to extend their applications to other machines. Drying speeds have been increased from 33⅓ to 50% as an average, and in some instances as much as 100%.

The Carbomatic unit consists of a burner having a special refractory surface. As gas is burned over this surface, infra-red rays are produced. No flame is visible. Any type of flammable gas, manufactured or natural, can be employed for generating the rays. Admixture of the gas and air in proper proportions to provide any desired temperature between 125 and 2500°F. is carried out at some distance from the burner to eliminate any danger of explosions. At the Progressive plant, a well-known A.G.A. system is employed for mixing the gas and air.

If desired, each unit can be individually controlled, thus making it possible to establish several drying zones, each at a different temperature. This is particularly advantageous in such applications as the new pigment-dyeing process, and in crease-resisting and other finishing processes in which synthetic resins are employed, where it is necessary to pre-dry the fabric at a comparatively low temperature, dry at a higher temperature, and cure at a still higher temperature.

One of the advantages of the radiant-heat generator is that it can be installed in conjunction with practically any type of existing drying equipment, and can be placed in any position—vertical, horizontal, or inverted. The accompanying photograph shows two burners placed vertically between a quetsch and a dryer in the Progressive plant. Since this photograph was taken, two more burners have been installed in a horizontal position so that the cloth passes over them immediately after it goes through the nip rolls. Other units have been installed in conjunction with tenter frames and with Palmer machines.

Executives of the company are well pleased with the results obtained from the radiant-heat generators. They state that the greatly increased drying speed more than outweighs the extra cost of the gas required. The units have given no trouble and have proved to be an efficient, and inexpensive means of stepping-up the output of the plant.

TEXTILE WORLD, NOVEMBER, 1942

Send for descriptive literature telling how you can speed up and improve your drying and curing problems

CARBOMATIC CORPORATION

ENGINEERS AND MANUFACTURERS OF
RADIANT HEAT BURNER EQUIPMENT

Dept. T-8

GENERAL MOTORS BUILDING

1775 Broadway **New York, N. Y.**

Factory: New Haven, Conn.

Wax *Soldiers' Uniforms?* Yes! With DRAX

Today many an army uniform is waxed with DRAX, Johnson's Water Repellent Textile Finish. Uniforms impregnated with this wax emulsion become stain and dirt resistant, water repellent. They're smarter looking, easier to launder.

DRAX is a stable, aqueous emulsion of waxes and non-critical aluminum salts and emulsifying agents. Does not change color or "hand" of textiles. May be used on vat or sulphur-dyed textiles. Non-flammable. Inexpensive. Supplied to meet Army Quartermaster Department specifications.

Write for the facts about DRAX. Ask for free test samples.

S. C. JOHNSON & SON, INC.

Industrial Wax Division • Dept. T-13

Racine, Wisconsin

Buy United States War Savings Bonds and Stamps

FIDELITY
UNIVERSAL RIBBERS
true rib
FOR PERMANENT ELASTICITY
SNUG FIT IN HOSIERY TOP
Here is the machine to put permanent elasticity and snug fit into hosiery tops—at minimum expense. Every part and every motion of the FIDELITY Universal Ribber reduces cost. Dogless has no vibrating parts — avoids repairs and delays. Free vertical dial movement makes "picking up" easy.
To inspect an entire section of the dial, simply loosen one thumb screw. Loose course plate reduces needle breakage. Heads interchangeable without new dogless parts. Take-up gears entirely enclosed prevent oil spots and seconds. One-piece frame increases rigidity. FIDELITY Universal Ribber operates with less noise, vibration, attention. Write for detailed information and data.
FIDELITY
FIDELITY MACHINE COMPANY
3908-18 Frankford Ave., Philadelphia, Pa.

NEWS ABOUT MEN

been promoted to the rank of corporal at Camp Livingston. He recently completed a course at the Provost Marshal General's School, at Fort Oglethorpe, Ga.

Ralph Gaddy, formerly machinist for Cannon Mills Co., Kannapolis, N. C., until he entered the armed services of his country, who enlisted Feb. 22, and was heard from Aug. 28, from "somewhere in Great Britain", is reported missing in action.

Thomas H. Nelson Jr, representative of Penick & Ford, Ltd., in Charlotte, N. C., has been commissioned first lieutenant in the Army. Lieut. Nelson is the son of Dean Thomas H. Nelson of the Textile School, N. C. State College, Raleigh, N. C. Two other Penick & Ford southern representatives now in service are **Lieut. L. S. Poer,** USN, of Atlanta, Ga., and **Capt. W. R. Brown,** Coast Artillery, of Dallas, Texas.

J. Cal Harris, Anderson, S. C., formerly manager of Union Bleachery, Greenville,, S. C., and more recently with Deering, Milliken & Co., New York, is now with the Army somewhere in England with rank of captain.

John Wilson Kindell, Martinsville, Va., plant buyer for the E. I. duPont de Nemours & Co., local unit, has been commissioned a captain in the Service of Supply, Chemical Warfare Service, U. S. Army, and has reported for active duty at Atlanta, Ga.

Wm. E. Shinn, member of the faculty of Textile School of North Carolina State College, Raleigh, N. C., has been commissioned a major in the Army and assigned to the Chemical Warfare Center, Edgewood Arsenal, Md.

J. Loice Young, research engineer for Arista Mills Co., and Washington Mills Co., Winston-Salem, N. C., has been ordered to active duty as a first lieutenant at Camp Stewart, Ga.

Frank J. Lowe, for several years employment interviewer for E. I. du Pont de Nemours Co., Waynesboro, Va., has been commissioned as an ensign in the Naval Reserve.

J. N. Murphy, who has been a member of the Atlanta, Ga., force of the technical service of the Quaker Chemical Products Corp., is now a member of the U. S. Army.

William N. Dulaney, formerly with A. E. Staley Mfg. Co., in their Alabama territory, is now located at U. S. Naval Reserve Station, Free Gunnery School, Naval Air Station, Jacksonville, Fla., as gunnery expert with rank of lieutenant. He is an expert rifleman having made a hobby of small arms, of which he has a valuable collection.

A. Melville Jackman, formerly of Edmund Wright-Ginsberg Corp., New York, and vice-president of the New York Chapter of the National Institute of Credit, has been inducted into the Army and is now stationed at Miami Beach, Fla.

William H. Moore, assistant superintendent of Norwood, (N. C.) Mfg. Co., is now a private in the Army, located at Camp Lee, Va.

Corp. John F. Bartek, formerly creel boy at the Freehold, N. J. plant of A. & M. Karagheusian, Inc., who was with Captain Eddie Rickenbacker in his Pacific airplane crash and later rescued, was a guest at the company's New York office Dec. 21, and was entertained at lunch by the company's executives at the Empire State Club. Corporal Bartek's father, who is a weaver at the Karagheusian Mill, accompanied him to the luncheon.

T. J. Smith, of the Atlanta, Ga., office of the Reigel Textile Corp., has been inducted into the Army and has reported at Fort McPherson.

Eugene D. Cogburn, of the Atlanta office of Riverside & Dan River Cotton Mills, has been inducted into the Army.

J. A. Sorrels, Jr., formerly of Gainesville, Ga., for 14 years South Carolina representative for the N. Y. & N. J. Lubricant Co., with headquarters at Greenville, S. C., contacting textile manufacturers, has joined the Army at Fort Jackson, S. C.

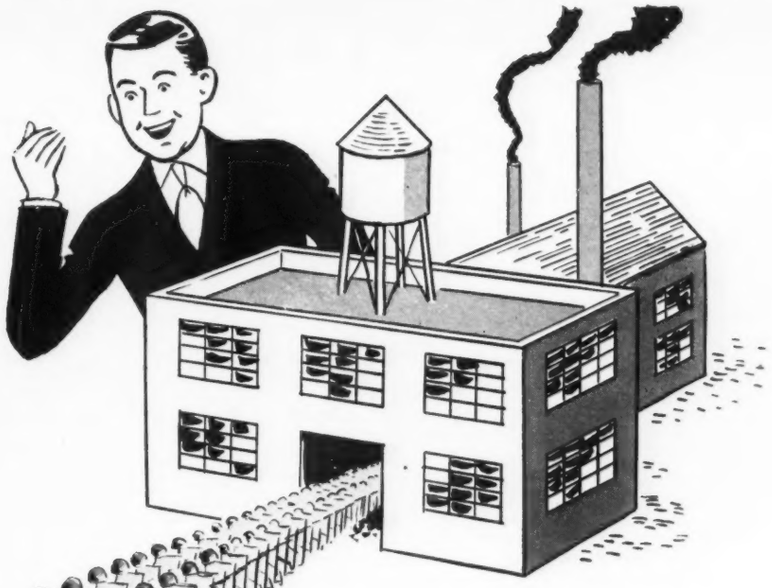
T. W. Crews, Jr., for the last several years a cotton classer and broker at Spartanburg, S. C., was graduated from the Army flying school at Randolph Field, Tex., recently.

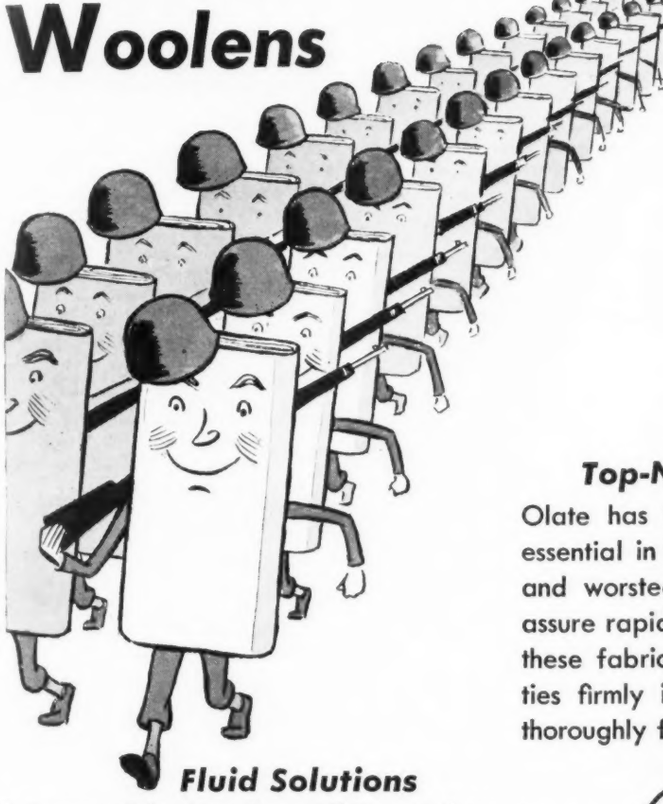
Stanley J. Nawoczenski, Reading, Pa., production manager of the **Reading, (Pa.)** Mill of Infants Socks, Inc., at the time he joined the armed forces, has just been advanced to sergeant.

Wm. A. Levins, industrial sales manager at the office of Myles Salt Co., Charlotte, N.C., has been commissioned an Army major in the division of purchases and supplies.

Olate's

EFFICIENCY AND SAFETY CARRY EXTRA WEIGHT IN PROCESSING Wartime Woolens





Smooth, fast, uninterrupted processing is a "must" when you're turning out woolen fabrics today. There can be no compromise with quality . . . specifications must be tightly adhered to.

These are days when Olate's processing efficiency and safety pay unusually big dividends.

Top-Notch Scouring and Fulling

Olate has the excellent lubricating properties so essential in the safe scouring and fulling of woolens and worsteds. First-rate detergent properties that assure rapid loosening of the dirt and oil present in these fabrics. Emulsifying qualities that hold impurities firmly in suspension until they can be flushed thoroughly from the fibers.

Fluid Solutions

Because of its low titer, Olate solutions are unusually fluid. They provide thorough, even penetration of the cloth . . . help guard against bare spots, uneven shrinkage, non-uniform fulling and poor felting. And Olate's free rinsing properties help produce clean, sweet-smelling goods.

For top-notch performance in your wet finishing operations, you can't buy a more dependable soap than Olate.

PROCTER & GAMBLE

Olate *Safe and Efficient for Every Textile Soap Usage*

We want you to try it—because Drummond has all the qualities you look for in a fine textile soap . . . . A high-body product of low alkali content . . . . No filler of any kind . . . . A high binding quality that results in minimum flocking . . . . Saves on steam and water because it rinses easily and completely . . . . Better fulling and scouring . . . . Leaves fabric perfectly clean with softest feel, better hand, brighter colors and whiter whites . . . . Want to try it? Just write us today for a free working sample and test Drummond Soap on your own goods.

LIBERTY—PEACE—SECURITY

THEY'RE WORTH EVERY BOND YOUR MONEY CAN BUY.

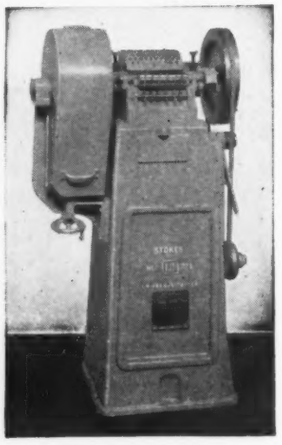
Standard Soap co. of camden

Charlotte, N. C.
CATO M. LITTLETON
326 PARK TERRACE

205 South 2nd St.
Camden, N. J.

Woonsocket, R. I.
G. TANGUAY
291 HARRIS AVE.

New! Universal Fibre Cutter



- **Makes 500 to 20,000 knife cuts per minute. Handles 4 to 8 tops or equivalent simultaneously.**
- **For cutting Rayon, Silk, Wool, Flax, Jute, Cotton, other Fibres—Wet or Dry.**
- **With 4 interchangeable cutter heads produces full range of fibres, from Flock to 8″ length.**

This is an improved machine, accurate, flexible, highly productive . . . for wet or dry cutting. Features include Self-sharpening Knives, Tension Release for Feed, Hand-wheel adjustments while operating, Ball Bearings, Balanced Heavy-duty Cutter Heads, Enclosed Motor, Clutch for quickly stopping feed rolls, Variable-speed drive synchronized with feed, and others. Fully described in Bulletin 42-FC.

F. J. STOKES MACHINE COMPANY

6004 Tabor Road **Olney P. O.** **Phila., Pa.**

F.J.Stokes FJS Est. 1895

Obituary

DAVID GESSNER

Charles Edwin Lord, 77, president of Galey & Lord, Inc., New York, died Dec. 9. He was a pioneer in the production of fine goods and was for many years president of the Aberfoyle Mfg. Co., Chester, Pa. He was an early user of "artificial silk" and is credited with having suggested the word "rayon" after a previous trial to name the new fiber "glos" failed to meet acceptance.

William H. Greenwood, 58, advertising manager and superintendent of erectors of Whitin Machine Works, Whitinsville, Mass., died Dec. 19. A native of Fiskdale, Mass., he joined Whitin in 1907, became superintendent of erectors 1920 and advertising manager in 1933. He had played an important part in arranging the recent ceremonies related to the presentation of the "M" award to Whitin.

David Hunter Mauney, 65, died at Lincolnton, N. C. after a long illness. Mr. Mauney was one of the textile pioneers of that section of the South, beginning his long career in the industry with the Long Shoals Cotton Mill, of which he was general manager for 42 years. He also was president of the Mauney-Steel Co., cotton yarn commission house of Providence, R. I., and of the D. H. Mauney & Sons Mfg. Co., Maiden, N. C., which was organized two years ago. He was a director of the First National Bank of Lincolnton and had served several terms as chairman of the County Board of Commissioners. He had been a liberal contributor to Lenoir Rhyne College of Hickory, of which he was a trustee.

C. C. Allen, 62, for many years prominent in the hosiery circles, died in Kenosha, Wis., last month. He joined the Chicago-Kenosha Hosiery Co. in 1912, which later became the Allen-A Co. He was president of this company until 1926.

Eugene O. Beyer, 81, who became a partner in Neuss, Hesslein & Co., New York, in 1893, died Dec. 3. When the firm incorporated he became vice-president and treasurer, retiring from these offices in 1927, but continuing as a member of the board. He would have been with the concern 50 years next February.

David Gessner, 83, inventor, founder, and president of the David Gessner Co., Worcester, Mass., died Dec. 1. He came to the United States from Germany in 1876 and settled in Worcester. After a period with other textile machinery manufacturers he started his own firm. His son, David Gessner, Jr. treasurer of the company, died two months ago.

George Mann, 62, president and treasurer of George Mann, Inc., textile chemicals, Providence, R. I., died Dec. 16. He established his business about 20 years ago.

David S. Youngholm, 53, vice-president of Westinghouse Electric & Mfg. Co., in charge of the company's Lamp Division, Bloomfield, N. J., died recently.

Edward P. Bosson, 78, president and treasurer of Bosson & Lane, Inc., chemists, Atlantic, Mass., died in Newton Center, Mass., on Dec. 13.

Charles W. Shockley, 50, manager of the New York office of the Print Cloth Group until taken ill several months ago, died at Columbia, S. C., Dec. 19.

Alexander N. Cook, identified with the carpet industry for 55 years, and most recently sales promotion manager of Bigelow-Sanford Carpet Co., died at his home in Larchmont, N. Y., Dec. 3.

Morris R. H. Levin, 59, president and general manager of Century-Beverly Knitting Mills, Pottstown, Pa., died Nov. 23.

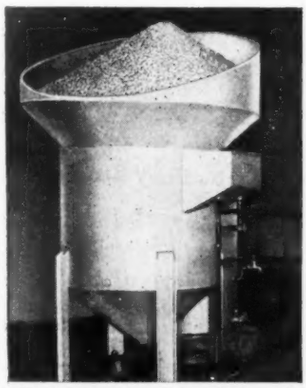
William C. Brickner, 79, former owner of Brickner Woolen Mills, Sheboygan Falls, Wis., died suddenly Dec. 9. Mr. Brickner became associated with the woolen mills, which was started in 1887 by his

SALTY SAYS:

"ON THE LEVEL... 100% SATURATED BRINE ASSURES LEVEL DYEING!"

"ARE YOU having trouble eliminating spotting, streaking and white edges? Then you ought to switch from dry salt to brine. You see... brine disperses *evenly* throughout the vat... there are no undissolved crystals to ruin the dye-lot. Only you *must* use a 100% saturated brine.

"And that's easy when you install a Lixate Dissolver! It produces a brine of absolutely 100% saturation and 100% clarity—a brine unobtainable with ordinary stirring-type devices—whether manual or machine operated. To prove Lixate Brine's 100% saturation to your own satisfaction, you need but take a single reading with a salometer!



"Here's the Lixator installed at the Warren Fabrics Co., Inc., West Warren, Mass."

"Further, a Lixator will cut your costs. It requires no power for it has *no* moving parts! And it doesn't cost you a fortune to install. In fact, you merely lease the Lixator at a very nominal annual sum. Then up goes the efficiency of your operation and down go production costs. The Lixator requires 10% to 20% *less* salt—utilizes inexpensive Sterling Rock Salt.

"Not only will the Lixator help you to achieve level dyeing... it will give you *perfect* zeolite water softener regeneration every time. You couldn't ask for more!"

"IT'S FREE!"

"Let me send you this 36-page fully-illustrated booklet on the Lixate Process for making brine. It gives you all the facts—installations, brine tables, diagrams, formulas. Just write for *your* copy!"

The LIXATE *Process*
Reg. U. S. Pat. Off.
for making brine

INTERNATIONAL SALT COMPANY, INC., DEPT. T-1, SCRANTON, PENNSYLVANIA

High Speed Production Methods demand a Caster that can stand punishment – for dependability and safety specify....

DARNELL
CASTERS & WHEELS

A SAVING AT EVERY TURN

DARNELL CORP. LTD., 60 WALKER ST., NEW YORK, N.Y.
LONG BEACH, CALIFORNIA, 36 N. CLINTON, CHICAGO, ILL.

Testing Saves Precious Time

To save Time—the one thing of which the supply can't be increased—use an adequate testing routine: to give "purchasing insurance," maximum production, and ready customer-acceptance.

SCOTT TESTERS

*Registered Trademark

HENRY L. SCOTT CO. 95 Blackstone St. Providence, R. I.

"YOU CAN COUNT ON WAK COUNTERS"

They are

RUGGED
ACCURATE
DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

Write—Phone—Wire

WAK INDUSTRIES CHARLOTTE, N. C.

NEWS ABOUT MEN

father. He became treasurer of the company upon its incorporation and in 1904 he was made president and general manager.

C. Hoffman Culpepper, proprietor of Culpepper Hosiery Mills, Danville, Va., died Dec. 14.

Sanford P. Carr, Sr., 51, owner of the Candlewick Yarn Mfg. Co., Dalton, Ga., was drowned Dec. 4.

Charles E. Quinn, importer of textile machinery at 263 Summer Street, Boston, Mass., for many years died suddenly in the South Station at Boston, on Dec. 18.

Albert Kahn, 73, founder and head of Albert Kahn, Inc., Detroit, Mich., industrial architects, died Dec. 8. He and his organization, specializing on industrial and business buildings, have erected such buildings in all quarters of the globe.

B. F. Barnes, 56, southern sales representative for Victor Ring Traveler Co., died Dec. 13 in Atlanta, Ga. He had been with Victor more than 18 years. He was previously associated with the Fulton Bag & Cotton Mills.

I. C. Wemple, 72, retired vice-president and general manager of Marinette (Wis.) Knitting Mills, died recently.

Weldon F. Twitty, 69, president of Darlington (S.C.) Mfg. Co., died Nov. 21. He joined the company in 1905.

David Allen Sykes, 84, retired vice-president of Hockanum Mills Co., Rockville, Conn., died recently at a Hartford Conn., hospital. He was born in Millville, Mass., and was general manager of the Hockanum Mills for many years.

Walter H. Nowill, 63, for many years with the former Jamison Textile Co., New York, and lately a major in Army Ordnance, died recently.

Arthur T. Hopkins, 73, formerly superintendent of Boston Woven Hose Co. and general manager of the footwear plants of the U. S. Rubber Co. in Connecticut and Cleveland, died in Wellfleet, Mass., Dec. 19.

George Bristle, Jr., 75, a retired member of the worsted yarn firm of Howland Croft Sons & So., Camden, N. J., died Dec. 16.

Arthur G. Hosmer, 80, for 30 years superintendent of R. T. Sullivan Mills, Newton Lower Falls, Mass., died in that city Dec. 14.

Lt. Col. John R. Bailey, 70, who was called from retirement in 1940 to serve at the Philadelphia Quartermaster Depot, died Dec. 21. Colonel Bailey had been officer in charge of inspection of the Quality Control Branch in the Procurement Division of the depot since last August. He entered the army during the first world war and served until his retirement for age in 1936. From 1932 to 1936 he was in charge of the manufacturing division of the Philadelphia depot.

James Parks Gray, retired hosiery manufacturer, died at his home in Charlotte, N. C., Dec. 30. Captain Gray, who received his title in the Spanish-American War, had during his business lifetime operated several hosiery plants located at Bristol, Va., and in western North Carolina.

Walter Scott Williams, 70, chief chemist and purchasing agent for dyes and chemicals, Mount Hope Finishing Co., North Dighton, Mass., died Dec. 18. Mr. Williams was formerly chemist at Arnold Print Works and at United States Finishing Co., and vice-president of the American Association of Textile Chemists & Colorists.

Vaughn Nixon, 63, president of Atlanta (Ga.) Woolen Mills and one of Atlanta's leaders in business, civic and religious life for many years, died Dec. 23. He had headed the Atlanta Woolen Mills for nearly 20 years, succeeding his father, the late William M. Nixon.

Nathan Cohen, 64, founder and president of the former Prudential Silk Co., Paterson, N. J., died last month.

R. A. Hill, 72, president of Sakura Silk Mills, Kane, Pa., died at his home in Florida.

William H. Beck, Sr., 83, for some years owner and operator of the Beck Hosiery Mill, Cressona, Pa., died in Hazleton, Pa., recently.

Frank S. Wilcox, 70, head of the Tryon (N. C.) Processing Co., died Dec. 16. Before entering the business of yarn processing several years ago, he was engaged in the manufacture of hosiery.

Michael Kerwin, 72, textile machinery broker, Philadelphia, Pa., died recently. His son Leo Kerwin, with him for 14 years, succeeds him to head the business.

You Have A Choice When You Use

Ahcopel

OTHER

AHCO PRODUCTS

Ahcovel Substantive Softener

•

Ahcobinder-T

•

Ahcobond-S

•

Ahcowet-SM Wetting Out Agent

•

Resynon Finishing Compounds

•

Concental Softener

•

Sizing and Printing Gums

•

Heavy Chemicals

One formula does not fit all water repellent requirements any more than one suit of clothes fits all men. That's why we give you a CHOICE of formulas, when you use Ahcopel.

★

If desired, we make the emulsion mildew resistant, to Government specifications. The degree of water repellency can also be regulated to needs.

★

The wide adaptability and the efficiency of Ahcopel are due to our long experience in this field. Ahcopel was one of the first water repellents developed in this country.

MILITARY USES FOR AHCOPEL

Uniforms

Shelter Tents

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Webbing

Sleeping Bags

Parachute Cords

ARNOLD-HOFFMAN & COMPANY, INC.

Established 1815 **PROVIDENCE, RHODE ISLAND** Plant at Dighton, Mass.

NEW YORK ★ BOSTON ★ PHILADELPHIA ★ CHARLOTTE

RYERSON CERTIFIED STEELS

Prompt Shipment from 10 Strategically-Located Steel-Service Plants... Principal products include—Alloy Steels, Tool Steels, Stainless Steel, Hot Rolled Bars, Hoops and Bands, Beams and Heavy Structurals, Channels, Angles, Tees and Zees, Plates, Sheets, Cold Finished Shafting and Screw Stock, Strip Steel, Flat Wire, Boiler Tubes and Fittings, Mechanical Tubing, Rivets, Bolts, Nuts, Washers, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc. Plants at: Chicago, Milwaukee, St. Louis, Detroit, Buffalo, Cincinnati, Cleveland, Boston, Philadelphia, Jersey City.

TL

TEXTILE FINISHERS

Specializing in Mildew Proofing, Flame Proofing, Water Proofing of Textile Fabrics.

A 10 YEAR OLD PROVEN PROCESS TREESDALE TREATED

TREESDALE LABORATORIES, INC.

Exec. Offices: Benedum-Trees Bldg., Pittsburgh, Pa.
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ATOMIZERS
UNIT SYSTEM
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AIR FILTERS
HEATING
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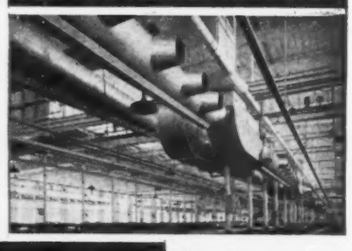
ENGINEERS — EQUIPMENT FOR THE TEXTILE INDUSTRY



Bahnson System
AIR CONDITIONING ENGINEERS
THE BAHNSON CO. WINSTON-SALEM, N. C.

For 25 years we have been successfully solving the air-conditioning problems of the Textile Industry.

TEXTILE MILL NEWS

Cotton Mill News

Asheville (N. C.) **Cotton Mills** have bought a lot adjacent to its plant from the city for $4,675.

Joseph Bancroft & Sons Co., Inc., Reading Cotton Mills, Reading, Pa., have started construction of runways between the buildings on the east side of South Ninth St. to East Laurel St.

Borden Mills, Inc., Kingsport, Tenn., has completed construction of a brick and steel cafeteria near the plant for convenience of operatives. The building and equipment cost about $15,000.

Crown Curtain Mills, Philadelphia, Pa., have leased from Lanard & Axilbund, representing the Amber Realty Co., 20,000 sq. ft. of space in the building at the southeast corner of Westmoreland and Amber streets, Philadelphia.

Kendall Co., Oakland plant, Newberry, S. C., was damaged to the extent of $2,000 by a tornado which struck that section on Dec. 1.

Kilburn Mill, New Bedford, Mass., reports net profit after taxes and depreciation of $172,511, for the year ended Sept. 26, 1942. This compares with a net profit of $131,003 for the preceding fiscal year.

Lockport (N. Y.) **Cotton Batting Co.** has purchased the New York City division of the Miller Bros. Co., manufacturer of wool and down comforts. Thomas D. Cole, president of the Lockport company, said machinery and equipment will be moved to Lockport.

Lonsdale (R. I.) **Co.** has disposed of its local Ann and Hope mill to Edward A. McNulty, president and treasurer, Mack Construction Co., Pawtucket. Plant has been idle for about 10 years, and has been used in part recently by company for storage. Plant is located on a tract of about 12 acres of land, included in sale, and totals close to 400,000 sq. ft. of floor space. It is understood the building will be razed.

Marks Mfg. Co., owner of a cotton mill at third and Water Sts., New Cumberland, Pa., will erect an additional building at cost of $15,000.

Merrimack Mfg. Co., Lowell, Mass., is considering early conversion of power plant from oil to coal fuel, with installation of stokers, coal and ash-handling equipment, and auxiliary apparatus.

Riverside & Dan River Cotton Mills, Danville, Va., Riverside Division suffered fire loss estimated at $75,000. Fire occurred on third floor of yarn mill and was controlled at point of origin.

Rowan Cotton Mill, Salisbury, N. C., has been purchased by the Rowan Lumber Co. The machinery will be moved out and the building will be used by the Salisbury Bonded Warehouse for a cotton storage building.

Threads, Inc., Gastonia, N. C., No. 2 plant is now housed in a new and modern mill building just south of the former plant. Much additional space is contained in this structure.

Worcester (Mass.) **Braiding Co.** suffered fire loss estimated at $30,000 early in December.

Wool Mill News

Auburn Garnetting Co., Inc., 60 State St., Boston, Mass., recently chartered with capital of 1000 shares of stock, no par value, plans operation of a mill in this vicinity. Vincent L. Hennessy, Belmont, Mass., is president and treasurer.

Beattie Mfg. Co., Little Falls, N. J., has begun construction of new power plant at mill, for which general contract recently was let to L. H. Focht & Son, Reading, Pa., reported to cost over $60,000, with equipment. Gilbert Associates, Inc., Reading, are consulting engineers.

Franklinshire Worsted Mills, Philadelphia, Pa., suffered a fire in their three-story brick building on Nov. 28. No estimate of loss was reported.

Guelph Carpet & Worsted Spinning Mills Ltd., Guelph, Ontario, reported for the fiscal year ended September net operating profit of $497,938, compared with $295,730, the previous year. Tax provision amounts to $253,679, compared with $152,000 a year earlier. Net profits stood at $119,811, compared with $68,582.

Norris L. Holliday, 132-42 Burnside St., Philadelphia, Pa.,

Better Way to Move War Goods

THE Barber-Colman system of Spooling and Warping embodies a number of features which are contributing materially toward better results in the war effort. Most of these have to do with efficient handling of materials and with conservation of the operator's energy. For instance, the picture shows the trident transfer table, located between the Automatic Spooler and the Super-Speed Warper. Cheeses from the spooler are placed on tridents which are then slid onto the roller-top transfer table by an easy push. No heavy lifting is necessary and the material is moved quickly with a minimum of effort. Other features include convenient bobbin storage bins, easy-running trident trucks, handy arrangements for creeling, self-threading drop wires, and a special comb to speed up creeling-in time. With a premium on the efficient production of war goods, mills having Barber-Colman equipment are fortunately situated to keep up with high standards of quality and large volume demands.

For Example . . .

The following production figures show results being obtained in a prominent mill running medium counts for two-ply twills used in uniforms and other similar military cotton goods.

Count	20s
Ring	2¼"
Traverse	7¾"
Pounds per hour per Spooler	490
Beams per Cheese	2
Yards per Beam	20,000

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. • GREENVILLE, S. C., U. S. A. • MANCHESTER, ENGLAND • MUNICH, GERMANY

WHITMAN YARNS
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ARLINGTON MILLS
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INDUSTRIAL PLANTS • PAPER MILLS • TEXTILE MILLS • PLANS AND DESIGNS
STEAM UTILIZATION • TOBACCO FACTORIES • KNITTING MILLS • LOCATION STUDIES
APPRAISALS • REPORTS • WATER TREATMENT • WATER SUPPLY • SURVEYS • POWER

HEDDLE FRAMES
•
HEDDLES
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SHUTTLES
•
HAND CARDS • STRIPPER CARDS
SINCE 1830
THE SHUTTLE PEOPLE
WATSON-WILLIAMS
MANUFACTURING CO.
MILLBURY, MASSACHUSETTS
SOUTHERN OFFICE: W. F. Daboll, 810 Woodside Bldg., Greenville, S. C. NORTHERN REPRESENTATIVE: G. C. Burbank, 32 Beaconsfield Rd., Worcester, Mass.

sustained a fire loss recently at wool spinning and carding mill, location noted. No estimate of loss announced. The damage will be replaced.

Pacific Mills, Lawrence, Mass., is considering early conversion of one of its two local power plants from oil to coal fuel, with installation of stokers, coal storage facilities, coal and ash-handling machinery, etc.

Arthur Rabinovitz, Chelsea, Mass., has work under way on new two-story wool storage building, 42 x 100 ft., at 865 Eastern Ave., Malden, Mass., for which general erection contract recently was let to Shapiro & Yanowitz, Chelsea.

Rayon & Silk Mill News

Celanese Corp., Amcelle, Md., is giving employment to a number of women in downtwisting department, handling operations previously limited to men workers.

Joy Silk Mill, Hartsville, S. C., was badly damaged by a heavy storm which struck that section on Dec. 1. The roof of the plant was crushed.

Leon-Ferenbach Silk Co., Johnson City, Tenn., has begun erection of new one-story addition for extension in spinning division. No estimate of cost was announced. Work is being carried out by day labor.

Cabot Mfg. Co., Brunswick, Me., has been sold and is now operating as the Verney-Brunswick Mills, with Gilbert Verney as president and the Iselin-Jefferson Co. of New York as selling agent. Mr. Verney is also president of Verney Mills, Manchester, N. H., and of the Peterborough (N. H.) Mills, both rayon goods producers. Cabot recently figured in a transfer when over 95% of the outstanding stock was deposited for sale of the properties to Jacob Ziskind of Fall River, president of the Crescent Corp. at a reported price of $80 per share.

William Skinner & Sons, Inc., Holyoke, Mass., are making alterations and improvements in mill No. 2. A building permit recently was issued for work, which is being carried out by day labor. No estimate of cost announced.

Stephen Spinning Co., Manchester, N. H., has sold its weaving division to a New York syndicate which will operate it as Concord Mills Corp. Abraham Rosen, head of the syndicate, is treasurer of the new firm. Joseph Robillard, formerly of Lowell, Mass., is superintendent.

Suncook Mills report net profit for fiscal year ended Sept. 26, 1942, after all charges of $160,183 compared with $248,375 in previous fiscal year. Net sales were $8,304,181 compared with $5,275,110.

United States Rayon Co., Brooklyn, Conn., now controlling the Furness-process rayon machinery formerly operated by Imperial Rayon Co., at Gloucester City, N. J., will start up in the near future. Production will be 4,000 lbs. daily of 300 denier cuprammonium yarn. David Schrage, New York, heads the company. He is also head of Cia. Industrial Cubana de Gomas of Metanzas, Cuba.

Knitting Mill News

Amazon Knitting Co., Muskegon, Mich., discontinuing operations permanently (previously reported) has disposed of its entire mill equipment to Republic Textile Equipment Co., New York, N. Y., which will dismantle the plant and dispose of the machinery in small parcels. Equipment includes 20,000 cotton spindles and preparatory equipment for corded yarn, 300 knitting machines, 400 sewing machines and accessory equipment.

Arteraft Silk Hosiery Mills, Inc., M St., near Torresdale Ave., Philadelphia, Pa., have arranged for purchase of a group of industrial buildings at 3801-13 L St., comprising two two-story buildings and a one-story structure, on site 535 ft. long, for a reported consideration of $120,000. Company will improve and occupy at early date.

Draper Knitting Mills, Inc., New York, N. Y., care of Sigmund J. Cumins, 1441 Broadway, New York, attorney and representative, have been organized with capital of 200 shares of stock, no par value, to operate a local mill.

Logan (Utah) **Knitting Mills** have sold plant on Federal Ave. to Malout Bros. of Los Angeles, Calif.

Penn Hosiery Mills, Inc., Reading, Pa., have been granted a building permit for improvements amounting to $1,750 to their mill building.

Tri-State Hosiery Co., Newark, N. J., care of Theodore Koerner, 24 Commerce St., Newark, attorney and representative, has been organized

WONDERING WHAT YOUR COMPETITION IS PLANNING FOR

"AFTER THE WAR"?

You are probably giving a lot of thought these days to the effect of current hosiery developments on the post-war market. That your competition is taking time out, also, to plan ahead you may be sure. For it is apparent to alert mill management that the hosiery business will be different, when the war is over, from anything we have known.

This is a tribute, really, to the industry's ingenuity in creating—not substitutes, simply to *tide over* for the duration, but refreshing new styling, techniques and materials able to stand on their own merits, quite apart from the war's influence.

Already, from available yarns, have come altogether original styles to win good retail acceptance. Even more promising creations are anticipated from yarns now in the process of development—with the post-war market very much in mind. All of these are being brought forcibly to the consumer's attention—by new sales policies keyed to the tempo of the times... by a wealth of favorable publicity and, of course, by the steady dwindling of hosiery stocks in conventional yarns.

So, however busy you may be at the moment with current problems, it is good business to "take stock" of your mill's future position in what is certain to be a highly competitive market. For by laying your plans now, you will be able to act quickly and decisively, once the emergency is over... getting new production rolling ahead of competition. The *right* knitting machinery to meet after-Victory hosiery demands will be an obvious advantage. This is one of the many aspects of conversion to peacetime manufacture that we, as machinery builders, have been working on. Would you like to talk it over with us?

The high efficiency of Scott & Williams knitting machines can *only* be maintained by using genuine S & W knitting machine replacement parts. You can count on prompt delivery, too, from S & W stockrooms at Laconia. Teletype service is free from our New York and High Point offices.

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

ESTABLISHED 1865

SCOTT & WILLIAMS

INCORPORATED

40 WORTH STREET • NEW YORK, N. Y.

TEXTILE INDUSTRY RESEARCH
INCORPORATED
11 WEST 42ND STREET NEW YORK, N. Y.
CONSULTANTS ON TEXTILE MANUFACTURING
AND DEVELOPING
SPECIALIZING IN
OPERATING METHODS. WORKING CONDITIONS.
MAINTENANCE. WASTE CONTROL.
NEW FIBRES AND PROCESSES

Simplified **DESIGN**
Flexible **POWER**
Better **EVAPORATION**
More sensitive **CONTROL**

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

NOVELTY-YARNS
For
WEAVERS-KNITTERS
MONTGOMERY
WINDSOR LOCKS, CONN.
Designers and Spinners of Novelty Yarns

Coming...TEXTILE WORLD'S
75th Anniversary Number
JUNE • 1943

with capital of $100,000, to operate a knitting mill in this vicinity.

Processing Plant News

Arnold Print Works, Inc., Adams, Mass., has adopted a full capacity schedule for the first time since the company was acquired by Aspinook Corp., Jewett City, Conn., a number of months ago.

Barret Textiles, Inc., 40 East 34th St., New York, N. Y., recently organized, have acquired the property of Glendale Linen Co., bankrupt, with mill at Middlesex, N. J., including technical equipment, pattern screens, etc., and will operate in future for the manufacture of decorative fabrics. William Maxwell, formerly identified with the Glendale company, is head.

Burlington (N. C.) Dyeing & Finishing Co., has closed its A and B units in Burlington.

Colonial Processing Co., Pawtucket, R. I., has approved plans for one-story addition, for which supersturcture will begin at once.

Glenlyon Yarn & Dye Works, Philadelphia, a unit of Sayles Finishing Plants, Inc., has been taken over by the Cook Yarn Dye Mills, Inc., headed by W. I. Cook who has managed the plant for nearly 30 years.

Newport Finishing Plant, Quidnich, R. I., is being liquidated by Republic Textile Equipment Co., New York. Plant comprises $200,000 worth of rayon and cotton finishing machinery installed new since 1939, including 60 stainless steel dye jigs, extractors, calenders, tenders, etc.

Ontario Dyeing Co., Inc., Philadelphia, Pa. Machinery and equipment at this mill were sold recently at a trustees' sale in bankruptcy to a number of buyers.

Miscellaneous Mill News

Atlas Hemp Mills, Juneau, Wis., have begun erection of new one-story addition, about 40 x 48 ft.

Canada Western Cordage Co., Ltd., Vancouver, B. C., is prepared to establish a mill and equipment for production of a number of products from flax and other soft fibers. According to Captain F. C. Brown, managing-director, this program will be carried out entirely without Government assistance, the company being prepared to finance the project itself. An initial outlay of about $200,000 is contemplated but there are possibilities for gradual development of a much larger industry.

Commodity Credit Corp., Washington, D. C., a Federal agency, has preliminary plans for group of about 16 new hemp-processing mills in Iowa, located at various points in State, each to consist of three main one-story buildings, with power plant and auxiliary structures, estimated to cost over $300,000, with equipment. Sites tentatively selected are at Algona, Boone, Britt, Correctionville, Eagle Grove, Fort Dodge, Green, Grundy Center, Hampton, Humboldt, Iowa Falls, Mason City, Osage, Story City, Traer and Webster City. Entire project will total in excess of $5,000,000 and will be financed by Defense Plant Corp., Washington, D. C., another Federal agency. Similarly there are plans for a group of 14 hemp-processing mills in Minnesota, to be located at different points, each consisting of several one-story buildings, with power house, estimated to cost over $200,000. Four new hemp-processing mills are planned for Indiana, on sites now being selected at Frankfort, Flora, Nappanee and Warren. Each will consist of several one-story buildings, with power house and auxiliary structures, estimated to cost approximately $300,000, with equipment. One similar plant is planned for a site in Kentucky, and another one for Illinois.

Fiber Processing Corp., Irvington, N. J., care of Ernest P. Biro, 1007 Springfield Ave., Irvington, attorney and representative, recently organized with capital of 100 shares of stock, no par value, plans operation of a local textile fiber mill.

Owens-Corning Fiberglas Corp., Newark, Ohio, will carry out expansion in plant for production for Government, with installation of machinery and equipment for largely increased output. Cost over $500,000, with financing provided by Defense Plant Corp., Washington, D. C. Giffels & Vallet, Inc., Marquette Bldg., Detroit, Mich., are architects and engineers.

Northwest Flax Products Co., Portland, Ore., has plans nearing completion for new one-story processing mill at Irving, Ore., reported to cost about $45,000, with equipment.

Uncle Sam's fighting men in the jungle, in the Arctic, on the desert - - all over the world - - are demanding fabrics finished to meet the extreme conditions of this *new* kind of war. ● Arkansas' vast peacetime experience is now solving wartime problems . . producing for textile processing and finishing plants products that meet exacting government specifications.

FRONT LINE PRODUCTS

FUNGICIDE G For mildewproofing all types of cotton cloth used in sleeping bags, webbing, tentage, mosquito netting, etc.

ARKO FIRE RETARDANT For flame-proofing uniform cloth, tentage, felts, etc.

CULOFIX L* For preventing color-bleed in water of direct dyed cotton.

AQUAROL* Produces a water-repellent finish on uniform cloth, overcoatings, and other military fabrics . . used in a single bath treatment with Fungicide G to impart water-repellency and mildew resistance . . used in a single bath treatment with Arko Fire Retardant to produce water-repellency and fire-resistance.

*REG. U.S. PAT. OFF.

ARKANSAS CO. INC.

NEWARK · NEW JERSEY

America's Highest Production Honor Won by Leading Textile Mills

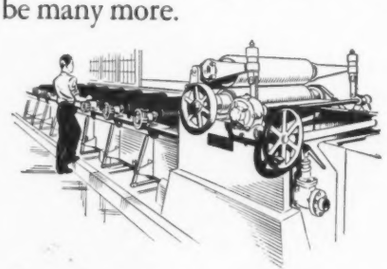
Call the roll of Army-Navy "E" Award winners in World War II . . . and you will see how magnificently the Textile Industry has responded to the demand for clothing and equipment for America's armed forces.

The tremendous yardages of fabrics needed to win the war are being turned out with remarkable efficiency. Uniforms . . . parachutes . . . tents . . . powder bags. Cottons . . . woolens . . . synthetic fibres. Duck . . . drills . . . twills.

The Textile Industry is meeting the challenge. The Army-Navy "E" is the way the procurement services have of saying "Well done."

Shown on this page are the presentation ceremonies that have taken place at a few of the mills. There have been many others. There will be many more.

Many Winners of "E" Awards Use Butterworth Machines



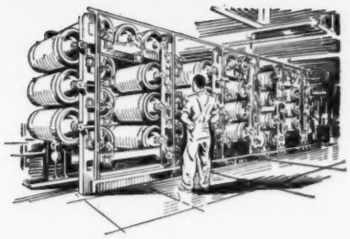
We are proud to play a part in the mighty drama of Textiles for Victory.

In many of the mills honored for production, Butterworth Machines help to speed quality and quantity of output in the Wet Finishing Department.

These mills are more than customers to us. They are old friends of the Butterworth Organization. We are glad to be partners with them once again in a great fight to crush the attackers of America.

Lanett Bleachery and Dye Works, West Point, Ga.
Seeing that Uncle Sam gets the fabrics he wants properly finished and carefully dyed according to specifications is now a full time job at Lanett Bleachery and Dye Works. It won them the Army-Navy "E." Shown at the presentation ceremonies, left to right, standing: George H. Lanier, president; Gov. Frank M. Dixon, of Alabama; Maj. Gen. Clifford L. Corbin, Assistant Quartermaster General; Brig. Gen. Walter S. Fulton, Commanding General, Fort Benning, Ga.; Lt. Col. Robert T. Stevens, Chief, Textile Clothing and Leather Sections of the Office of Quartermaster General. Front row, left to right: F. A. Wheelock, of J. B. Warne, Inc.; John A. Simmons, general manager of Lanett Bleachery and Dye Works; Joseph B. Warne.

J. L. Stifel & Sons, Inc., Wheeling, W. Va.
The presentation of the Army-Navy "E" is regarded by J. L. Stifel & Sons, Inc., as one of the most memorable events in their 107 years of existence. Stifel is supplying ever increasing quantities of their famous "Boot Brand" Fabrics to the Army, Navy and Marines. Shown holding the flag, left to right, are: Lt. Arthur C. Stifel, Jr.; Lt. Col. R. T. Stevens, Quartermaster General Office: Arthur C. Stifel, Sr.; Col. John Welch, Richmond Quartermaster Depot; Col. Harold C. Fellows; Capt. L. A. Herron; Lt. J. A. Koerber, Philadelphia Quartermaster Depot; Lt. Com. C. M. Royal.



All of the mills mentioned as "E" Award winners on this page use Butterworth Machines during wet finishing operations . . . for bleaching, boiling-out, drying, calendering, dyeing or any one of the many operations necessary to give our armed forces the clothing and equipment they need.

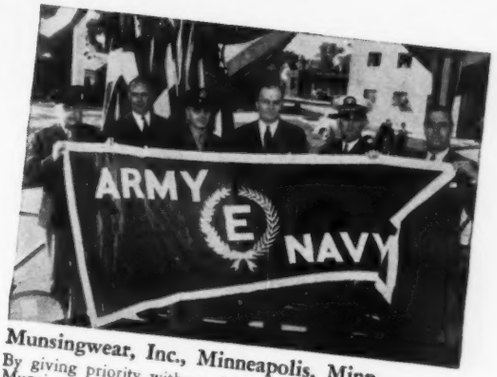
Butterworth Engineers are at the service of mill engineers and superintendents to keep production rolling . . . to locate and break annoying bottlenecks.

We are producing gun mounts for the United States Army. But, all of our facilities not required for Ordnance production are enlisted for the duration to help *you* solve your finishing problem.

Let our experience serve you now.

H. W. BUTTERWORTH & SONS CO., Phila., Pa.

Serving the Textile Industry Since 1820. Offices in Providence, R. I., and Charlotte, N. C. In Canada: W. J. Westaway Co., Hamilton, Ont.



Munsingwear, Inc., Minneapolis, Minn.

By giving priority without delay to Government business, Munsingwear, Inc., increased its volume for the armed services from 1 million dollars to 5 million dollars in a year's time. The company is now operating three shifts and is producing 16,000 to 20,000 undergarments a day. Shown holding the Army-Navy "E" pennant, left to right: Lt. Col. John N. Gage, Executive Officer, Chicago Quartermaster Depot; Ernest L. Olrich, President, Munsingwear; Brig. Gen. Joseph E. Barzynski, Commanding Officer, Chicago Quartermaster Depot; Gov. Harold E. Stassen, of Minnesota; E. C. Wilson, Vice-President, Munsingwear.

Cramerton Mills, Cramerton, N. C.

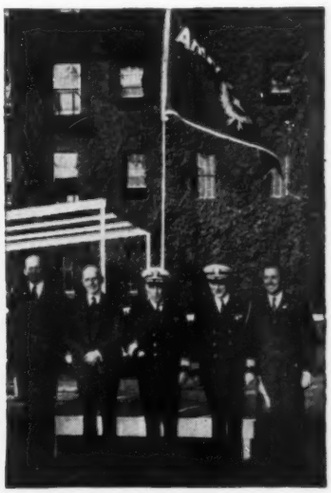
The story back of the winning of the coveted "E" by Cramerton Mills dates back to 1930, when Cramerton assisted the Quartermaster Corps in the development of the present Army Khaki, the official cotton uniform cloth. Now Navy and Marine Corps officers wear it as well. This is by no means the only military fabric made by Cramerton, but its production has been a major objective for 12 years. Shown at the presentation ceremonies are, left to right: Gov. J. M. Broughton, of North Carolina; Maj. Stuart W. Cramer, Jr.; Maj. Gen. E. B. Gregory; Capt. Alfred T. Clay, U. S. N.; Grover Cleveland Bridges, oldest employee.

Pacific Mills, Worsted Division, Lawrence, Mass.

In receiving the Army-Navy "E" Award, the Pacific Mills Worsted Division also earned the distinction of being the first worsted mill in the country to be so honored. The mill is working three shifts a day in all departments making military fabrics. Shown at the presentation, from left to right: Capt. G. C. Hall, U. S. N.; Maj. Gen. Clifford L. Corbin, Chief of Procurement Services, Office of the Quartermaster General; Gov. Leverett Saltonstall, of Massachusetts; Mayor Meehan, of Lawrence; E. D. Walen, vice-president, Pacific Mills, Worsted Division; Henry M. Bliss, president, Pacific Mills.

Aberfoyle, Inc., Norfolk, Va.

The Norfolk plant of Aberfoyle, Inc., won the Army-Navy "E" for outstanding production of nylon parachute cloth for the Army. Aberfoyle started weaving rayon goods more than 30 years ago and is one of the first mills to weave nylon into much-needed parachute fabric. The plant has been running two months ahead of schedule in fulfilling Government contracts. Edwin Lord, president of Aberfoyle, Inc., and Mrs. Mabel McDaniel, elected representative of the workers, are shown accepting the flag.



Boott Mills, Lowell, Mass.

The Boott Mills hold the honor of being the first cotton mill in New England to win the "E" award. They are also the first Lowell industry to be so honored. Boott Mills are now 100 per cent on Navy twill. Executives of the company and naval officers who officiated at the presentation are shown, left to right: J. Rogers Flather, assistant treasurer; Frederick A. Flather, Sr., treasurer and manager; Rear Admiral W. J. Carter, chief of Naval Supply Corps; Capt. Frank P. Delehanty, U. S. Navy; Frederick A. Flather, Jr.

Butterworth

PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY

For the Textile Industry

Cotton Rolls	Schreiner Calenders
Cotton and Wool Rolls	Silk Calenders
Combination Rolls	Embossing Calenders
Husk Rolls	Cloth Pilers
Paper Rolls	Water Mangles
Chasing Calenders	Dye Padders
Embossing Rolls	Squeezers
Friction Calenders	Washers
Rolling Calenders	Automatic Winders

Mullen Testers

Important Announcement!

Effective January 1, 1943, the name of Scully Steel Products Company was changed to United States Steel Supply Company

Scully... for many years a member of the family of United States Steel Subsidiaries — now takes a name which more fully represents its ability to serve you with a comprehensive list of steels and steel products.

Only the name has been changed. The same personnel in our eight conveniently located warehouses will continue to do their best to take care of your needs.

The prompt and courteous service that has made the name "Scully" famous will be maintained.

The addresses and phone numbers of our warehouses remain the same.

As always, we stand ready to give our customers every help we can in getting the right steel as promptly as possible.

UNITED STATES STEEL SUPPLY COMPANY

Distributors of Steel and Steel Products

CHICAGO
BRunswick 2000
Teletype CG. 605

BOSTON
STAdium 9400
Teletype BRTN 10

CLEVELAND
HEnderson 5750
Teletype CV 153

ST. PAUL-MINNEAPOLIS
NEstor 2821
Teletype STP 154

PITTSBURGH
CEdar 7780
Teletype PG 475

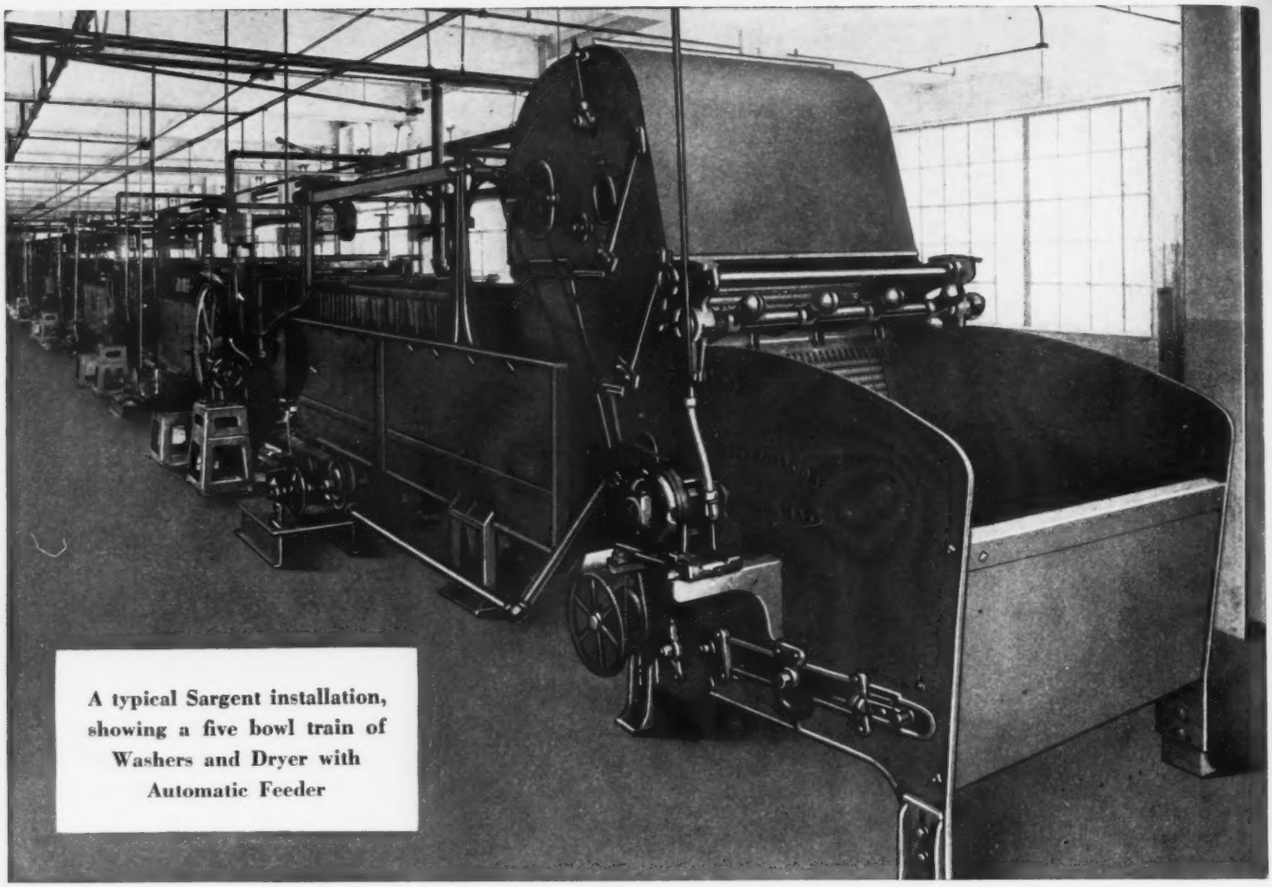
BALTIMORE
GILmore 3100

ST. LOUIS
MAin 5235

NEWARK, N. J.
BIgelow 3-5920—BErgen 3-1614—REctor 2-6560
Teletype NK 74

USS

UNITED STATES STEEL

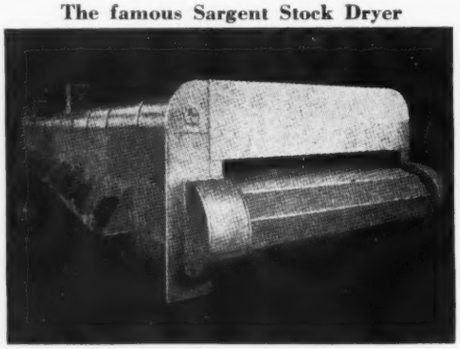


A typical Sargent installation, showing a five bowl train of Washers and Dryer with Automatic Feeder

Ushering in the NEW in "New Era"

THAT is just what the Textile Industry is experiencing when the latest types of SARGENT Preparatory Machinery are installed, because, wherever this is done, there is more *efficiency,* higher *speed,* less *waste* motion, larger *production* and greater *profits* • The Industry absolutely *needs* the *newest* SARGENT Units in order to produce the proper quality and fill the orders *on time* • For more than 88 years SARGENT has received unending recognition as specialists in Wool Scouring, Stock Drying and Picking Equipment, and its numerous fast-working Units are in daily operation in thousands of textile plants throughout America and foreign countries • There are various illustrated Bulletins available which visualize all the Sargent products, and all you have to do is *write for them!*

The famous Sargent Stock Dryer

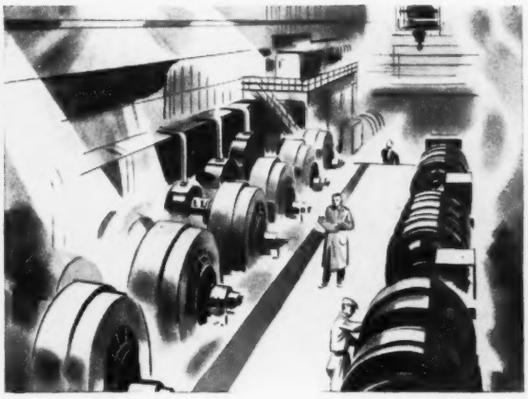


C. G. SARGENT'S SONS CORPORATION
Graniteville, Massachusetts, U. S. A.

PRECIPITRON* CLEANS THE AIR FOR AMERICAN WAR INDUSTRIES

90% of All Particles as Small as 1/250,000 of an Inch Cleared Away by ELECTRIC AIR CLEANING

emoving tiny, air-borne abrasive and cor-e particles, Precipitron is protecting super-hed surfaces of airplane engine parts and r materiel.

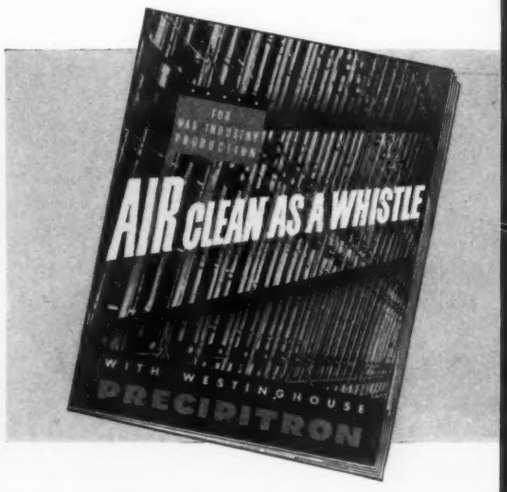


To reduce the threat of maintenance shutdowns in steel mills and central stations, Precipitron cleans the ventilating air for large rotating electrical machinery.

Where industrial operations create excessive amounts of harmful smoke, fumes and oil vapors, electric air cleaning clears the air and reduces ventilating costs.

pharmaceutical laboratories where miasma-conditions are essential, Precipitron's al air cleaning" removes one of the major gers of atmospheric contamination.

Because it removes particles as small as 1/250,000 of an inch, electric air cleaning reduces the number of rejects in the manufacture of delicate optic systems.



SEND FOR THIS FOLDER

For a full story of electric air cleaning's war production applications, write for the new Precipitron folder, B-3083.

*Trade-mark registered in U. S. A.

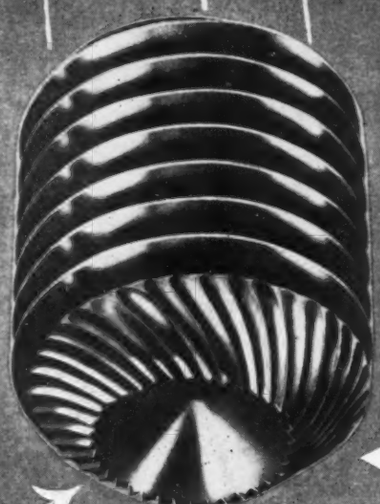
Westinghouse

EDGEWATER PARK • CLEVELAND, OHIO

Precipitron

Wherever you need a Cup-Point Set Screw that.....

STAYS PUT



Pat'd. and Pat's. Pend'g.

See the Point

UNBRAKO

Reg. U. S. Pat. Off.

Self-Locking HOLLOW SET SCREWS

with the Knurled Points

WON'T WORK LOOSE and INTERRUPT PRODUCTION

Just tighten an "UNBRAKO" Self-Locking Set Screw in the usual manner and the *knurled points* "dig in" and prevent the screw from "backing out". Here is the dependable way to avoid breakdowns and maintenance costs resulting from set screws working loose. Screws can be removed with a wrench and used again and again. Deliveries are better than average.

The Knurling of Socket Screws originated with "Unbrako" years ago.

Sizes: No. 4 to 1½ diameter.

"UNBRAKO" WELT BAR SCREWS

"UNBRAKO" Welt Bar Screws—are uniformly strong and accurate. Used in leading mills throughout the Industry. Let us send you samples.

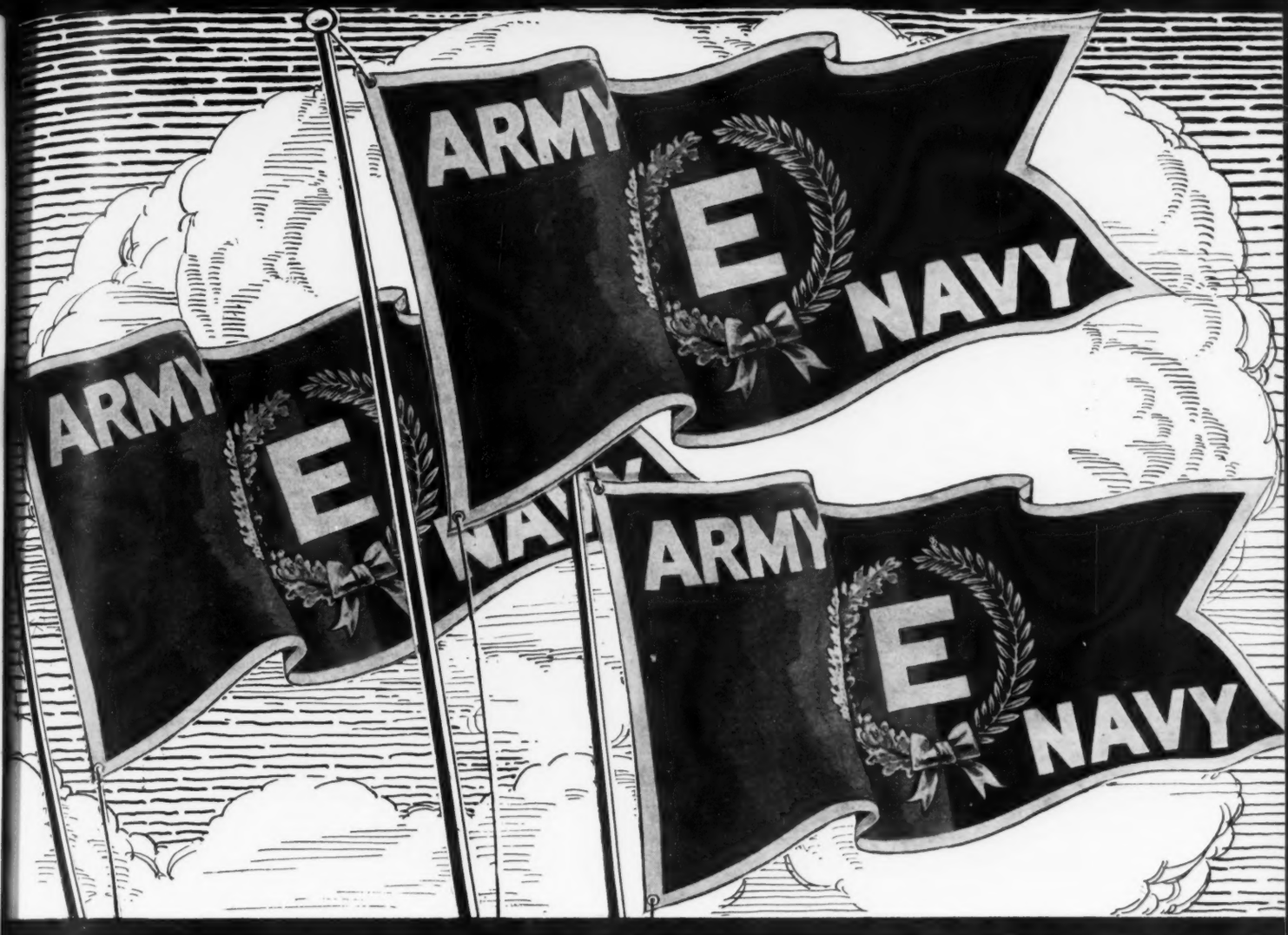
write for catalog—today

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA. BOX 571

— BRANCHES —

BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO



THREE PENNANTS FLY IN RECOGNITION OF

"High Achievement in the Production of War Equipment"

The employees of *all* Ingersoll-Rand plants won these Army-Navy "E" Awards for their high achievement in building equipment needed to win this war.

These men and women are turning out the Ingersoll-Rand machines urgently needed by our combat forces. They are also rushing through the I-R equipment that is vital for the production and operation of

Airplanes . . . Fighting and Cargo Ships . . . Tanks . . . Ammunition . . . Synthetic Rubber . . . Aviation Gasoline . . . Airfields, Bases, Roads and Bridges . . . Metal and Coal Mining . . . Railroads . . . Iron and Steel Mills . . . Machine Shops . . . Oil Production, Refining and Pipe Lines . . . Power Plants . . . Textiles . . . Foods . . . Process Industries . . .

COMPRESSORS
TURBO BLOWERS
CENTRIFUGAL PUMPS
OIL AND GAS ENGINES
ROCK DRILLS
AIR TOOLS
CONDENSERS

Ingersoll-Rand

14-237

11 BROADWAY, NEW YORK, N. Y.

The Aviation Industry needs Seed Money

THIS Victory crop is sweet—10,000 planes per month next year seem certain . . . 5,000 per month already passed . . . Worldwide average of four enemy planes knocked down for every American plane lost . . . Jap average five to one . . . Still better planes coming off the line.

And beyond the war, some people see a vast new industrial field opening up for America:

▶ Giant freight and passenger airliners, flying the airocean to every part of the globe, linking our cities in a traffic network that will obliterate time.

Family planes that will jump golfers to far off greens.

What are the chances for this exciting post-war crop of commerce and convenient travel from our aviation industry?

We think the chances are rather slim, and we ask you to take a serious look at the reason.

In our proper anxiety to prevent inflation and control war profits, we have passed tax laws that are taking away most of the "seed money" that aviation companies will need when the time comes to go it on their own in the post-war world.

▶ "Seed money" is that part of profit which is held for re-investment in a business to insure its growth.

"Seed money" will pay for research on new and better products. It will pay for retooling when post-war models are produced. It will pay for the study of methods to get the lower costs that widen markets. It will pay for setting up new distributors and dealers, and for hundreds of other activities that are involved in the *growth* of a business.

▶ American industry has grown on "seed money." It has been a national characteristic to re-invest most of our profits in development.

A dangerous confusion between personal profit (salaries and dividends) and re-invested profit (which we have called "seed money") has found its way into our taxing system.

The tax law, and government contracts, should allow American Industry to accumulate funds for the numerous tasks of post-war development.

A sum greater than the total now remaining after taxes will be needed, if we are to take advantage of the new opportunities that will exist after the war.

It is probably the oldest law in economics that enough of each crop must be saved to provide seed for future crops.

Ask your Congressman to see that this economic law is not disregarded in an effort to take excess profits out of war.

Reprints of this advertisement are available in handy booklet form.

McGRAW-HILL PUBLISHING COMPANY, Inc.

330 WEST 42ND STREET • • NEW YORK

Did you ever try to defend a PROFIT?

EVERY business man knows the difference between profit that is paid out to individuals and profit that **is held for re-investment** and future growth.

The trouble is that the public thinks of profit in terms of yachts, elaborate homes and costly debutante parties. They have learned to think that way because those things get the headlines.

The public does not know that far more profit money has gone back into American business than has ever been taken out for personal spending.

The McGraw-Hill Publishing Company is going to do its share in the job of explaining the difference between these two kinds of profit.

To be sure that the public does not confuse two different things that have always been called by the same name, we have developed the term "Seed Money."

"Seed Money" is explained in the McGraw-Hill newspaper advertisement reprinted on the opposite page. We urge you to read this advertisement carefully and apply its message.

There will be other McGraw-Hill advertisements on this vital industrial need. We hope, too, that other advertisers will adopt the term "Seed Money" and help by selling their employees in their own communities on the danger to living standards in taking away industry's ability to improve its plants and techniques.

★ ★ ★

THE McGRAW-HILL NETWORK OF INDUSTRIAL COMMUNICATION

23 publications, which gather "war-news" from the "war-production-front" through a staff of 153 editors and 725 engineer-correspondents... More than 1,500,000 executives, designers, production men and distributors use the editorial and advertising pages of these magazines to exchange ideas on war-production problems.

THE McGRAW-HILL BOOKS

Publishers of technical, engineering and business books for colleges, schools, and for business and industrial use.

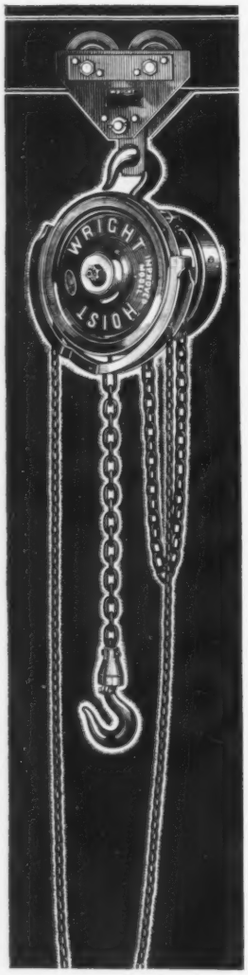
McGRAW-HILL PUBLISHING COMPANY, Inc.
330 WEST 42nd STREET • NEW YORK

Aviation—*(AMERICA'S OLDEST AERONAUTICAL MAGAZINE)—INFORMATION HEADQUARTERS FOR THE MEN WHO DESIGN, PRODUCE, OPERATE AND MAINTAIN AMERICA'S AIR SUPREMACY.*

American Machinist
Bus Transportation
Business Week
Coal Age
Chemical & Metallurgical Engineering
Construction Methods
Electrical Contracting
Electrical Merchandising
Electrical West
Electrical World
Electronics
Engineering & Mining Journal
E. & M. J. Metal and Mineral Markets
Engineering News-Record
Food Industries
Factory Management and Maintenance
Mill Supplies
Power
Product Engineering
Textile World
Transit Journal
Wholesaler's Salesman

AFFILIATED WITH BUSINESS PUBLISHERS INTERNATIONAL CORPORATION, PUBLISHERS OF BUSINESS AND TECHNICAL MAGAZINES FOR LATIN AMERICA, AND OVERSEAS CIRCULATION.

DON'T OVERLOAD!



WRIGHT HOISTS are built to carry more than their rated capacities, but like other well-made pieces of mechanical equipment they should not be overloaded. Overloading is dangerous—while today, abuse to machinery is akin to sabotage.

Watch the bottom hook

WRIGHT load hooks are drop-forged from special steel which, when subjected to excessive overloading, give visible warning by opening slowly. When the bottom hook has started to open, look to the top hook, too, for while it is stronger than the bottom hook, it also may be reaching a danger point.

Watch the load chain

WRIGHT HOIST load chains are electrically welded from special analysis steel, exceptionally high in tensile strength and elastic limit. Excessive overloading will stretch the chains out of pitch, thus preventing proper fit with load wheel pockets. This results in destructive wear to both chain and load wheel. Keep your chains well lubricated for long life. Take proper care of your **WRIGHT HOISTS**. You'll find the name of your nearest **WRIGHT** distributor in the telephone book.

In Business for Your Safety

WRIGHT MANUFACTURING DIVISION
York, Pa., Chicago, San Francisco
New York

AMERICAN CHAIN & CABLE COMPANY, INC.
BRIDGEPORT, CONNECTICUT

"FULL SPEED AHEAD"

That's the story of American production today—January 1943! Victory . . . which seemed so far away one short year ago . . . is sighted now, at the end of a long, rough road!

You can be sure of reaching "full speed ahead" in your spinning department if you use superior Dary Travelers . . . made by skilled workmen . . . sold and serviced by experienced representatives.

THE DARY RING TRAVELER CO.
TAUNTON, MASS.
See a Dary Representative TODAY!

JOHN E. HUMPHRIES, Box 843, Greenville, S. C.
JOHN H. O'NEILL, Box 720, Atlanta, Ga.
H. REID LOCKMAN, Box 515, Spartanburg, S. C.

Machine and Hand Knitting

Yarns

[French-Bradford]

for

BATHING SUITS
OUTERWEAR
HOSIERY
UNDERWEAR

★

Complete color assortments

American Woolen Company

225 Fourth Avenue **New York**

A Nurse to Warp Yarn

Emmons Heddles are tough — but they treat yarn like a baby

"Tough but not rough" describes the qualities of Emmons steel heddles which give you longer service and improved weaving.

Life is longer because of high tensile strength, corrosion-resistant plating. Weaving is improved, because the smooth heddle eye eliminates a chief cause of chafed yarn and warp breaks.

Quality of Emmons Certified Steel Heddles is checked twice — once by careful plant inspection of individual heddles — also by testing of sample heddles by an independent technical laboratory.

Be Certain — Buy Certified

EMMONS LOOM HARNESS COMPANY
Lawrence, Massachusetts . . . . Charlotte, North Carolina

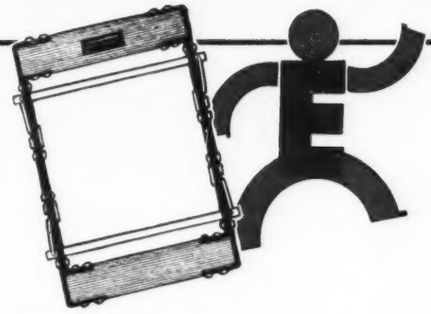
EMMONS REEDS KEEP TRAFFIC ON "GO"

Uniformly-sized (to .001″), accurately-spaced (to .01″), super-smooth dents of Emmons Reeds keep warp threads in line, giving you cloth free from reed marks or roughed-up yarn. Good knots, slubs and nits pass through resilient Emmons dents. Additional air space — up to 70% — is available as needed, without sacrificing strength or rigidity.

"Inspected and Approved" — the seal of Emmons quality — means painstaking inspection before every shipment of Emmons products.

EMMONS

WORKS OVERTIME WITHOUT CHARGING YOU



Look for the black EMMONITE finish on the ends of Emmons Heddle Frames. This Phytanium-blended, black finish actually penetrates the metal's grain—providing a protective surface without build up . . . fighting rust and wear. EMMONITE finish . . . hand-picked, knotless lumber . . . double shellac . . . rolled rivets . . . *extra* rivets—all these features add up to longer service.

EMMONS

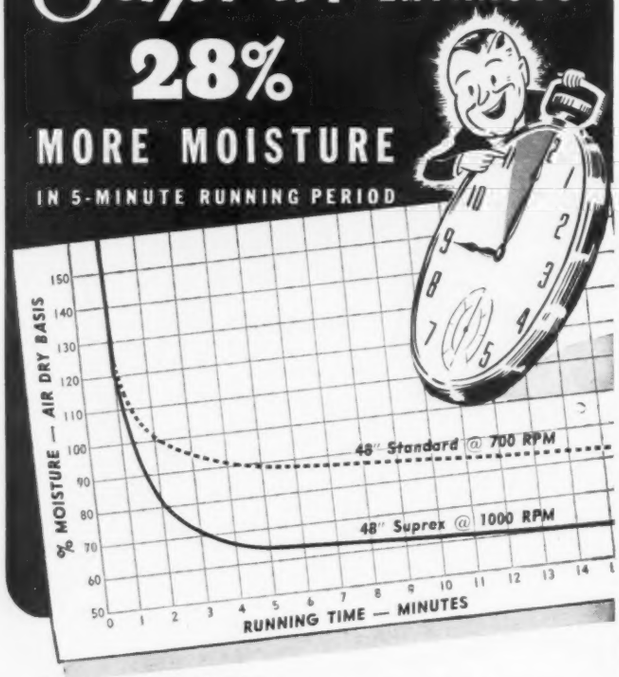
Lawrence, Mass. and Charlotte, N. C. All products stocked in Charlotte and Lawrence, Reeds manufactured in Charlotte. Branch offices: Clifton Watson, Manager of Southern Sales, Box 2036, Charlotte (Tel. Charlotte 3-7503) . . . Arthur Harris, Box 1982, Atlanta (Tel. Main 2643) . . . Alvin Braley, Box 236, Itasca, Tex. (Tel. 170) . . . W. S. Taylor, 171 Madison Ave., New York (Tel. Lexington 2-6060) . . . Albert R. Breen, 80 East Jackson Blvd., Chicago (Tel. Harrison 7140).

Argentina, Buenos Aires, Roberto Zander, 345 Juan Jaures; *Brazil*, Rio de Janeiro, A. Polak, Caixa Postal 362; *Chile*, W. L. Robinson, Casilla 1570, Valparaiso; *Cuba*, Havana, J. M. Perez-Pena, Box 1611; *Mexico*, Mexico, D. F. Leo Lenk, Apartado 533; *Colombia*, Medellin, C. E. Halaby & Co., P. O. Box 139.

CASE STUDY SHOWS

TOLHURST *Suprex* EXTRACTS 28% MORE MOISTURE

IN 5-MINUTE RUNNING PERIOD



HERE'S PROOF! A 48" "Suprex" Extractor operating at 1000 R.P.M. on cotton underwear tubing, reduced moisture content in the tubing to **65%** in **5** minutes.

A standard 48" extractor operating at 700 R.P.M. on identical material was able to reduce the moisture content only to **90%** in **5** minutes.

Even after **30** minutes operation, the standard extractor could not reduce moisture content below **82%**.

TESTS like this, on textiles with various characteristics as to fibre, stage of conversion and weave, have proved that TOLHURST Suprex is the fastest extractor of its type on the market. These time savings are achieved by the higher speeds possible with TOLHURST Suprex. Let us prove these claims on your materials. FREE Bulletin containing complete details on request.

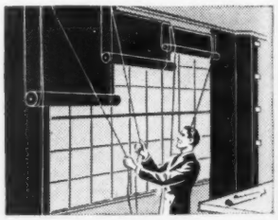
TOLHURST
CENTRIFUGALS
Division of American Machine and Metals, Inc.
EAST MOLINE, ILLINOIS

What would you do if you were ordered to BLACKOUT tonight?

THROW THE SWITCH? LOSE PRODUCTION . . . VALUABLE MAN-HOURS?

Don't Risk It. Install Tested, Inexpensive

CLOPAY BLACKOUT BLINDS *NOW!*



Don't get caught by a sudden, nation-wide scramble for blackout materials that might take months to supply. Get ready now, for uninterrupted production during test blackouts or actual alarms. Do it quickly, *economically*, with CLOPAY Blackout Blinds. Safer, more convenient than paint. Raise and lower quickly. 1/7 the cost of opaque cloth of adequate quality. Made of tough "flameproofed" crepe fiber. Used in many coastal plants and institutions, in several government buildings. Write for complete information and swatches of material.

CLOPAY CORPORATION
1268 Clopay Square
Cincinnati, Ohio

*EMPIRE *textile crayons*

ACTUAL SIZE

THE IDEAL MARKING CRAYON
for all textiles

Made especially for marking the roving in wool, cotton, silk, rayon, and all textile mills. 18 colors available. Write Dept. TW-9 today for FREE Color Chart!

*REG. U.S. PAT. OFF.

THE AMERICAN CRAYON COMPANY
1706 HAYES AVENUE SANDUSKY, OHIO
NEW YORK SAN FRANCISCO DALLAS

BEFORE THE TAKE-OFF *SINGER* IS ON THE JOB

Before one of the giant Curtiss "Commando" transports can take off, many things must be done. Men and women work day and night with many different tools and materials.

Singer sewing machines play a vital part in building planes, and clothing and equipping men for all branches of the armed forces.

Singer sewing machines formerly available for making hundreds of different things for civilian use are now sewing parachutes, uniforms, tents, gun covers, shoes, powder bags, fur lined helmets, and many, many other articles needed to bring speedy victory to US. And if, like many others, you are having trouble getting Singer sewing machines, remember that Uncle Sam is our first customer, and his needs must be satisfied first.

SINGER

SEWING MACHINE COMPANY

Manufacturing Trade Department

149 Broadway, New York, N. Y.

Branches in principal cities throughout the world

Copyright U. S. A. 1942 by The Singer Manufacturing Company
All rights reserved for all countries

(Photo courtesy of Curtiss-Wright Corp.)

70 coming up!

Our 70th year comes at a crucial time in the world's history. We're glad we've stuck to "Rings Exclusively" because that fact has forced us to do an extra good job to stay in business and grow. As a result, in this time of great urgency, the Textile Industry is able to obtain DIAMOND FINISH rings which are literally setting new records for high-production operation.

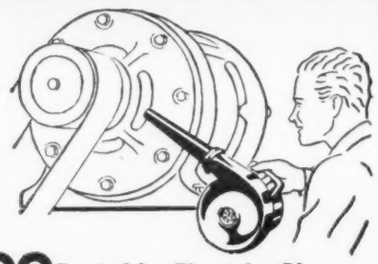
We make all types of Holders

WHITINSVILLE (MASS.) SPINNING RING CO.

DIAMOND FINISH

Makers of Spinning and Twister Rings since 1873

Blow Out Dust — Keep Motors and Machinery Clean with



TORNADO Portable Electric Blowers

PREVENT motor burnouts, overheating and shutdowns. Keep motors and machinery clean. Blow out dust, dirt, lint, chips, etc. with the powerful, portable TORNADO Electric Blower. Quickly pays for itself in cutting repair and replacement costs.

Write for details and FREE Trial Offer

Request details on Low-Priced Air-Raid Sirens

BREUER ELECTRIC MFG. CO. 5086 Ravenswood Ave. CHICAGO, ILLINOIS

MOHAIR WORSTED AND WOOLEN YARNS

COLLINS & AIKMAN CORPORATION

PERCY A. LEGGE *Sales Agent*

New York • Philadelphia • Boston

OSCAR HEINEMAN CORPORATION

•

PROCESSING

Rayon and Nylon Yarns

for Hosiery Knitting Trade

We specialize on high twist rayon processed with "AVCONIT No. 1" for full fashioned hosiery.

2701 Armitage Avenue Chicago, Illinois

Aberfoyle Mfg. Co., 123 So. Broad St., Philadelphia, Pa.
N. P. Murphy, 813 Guilford Bldg., Greensboro, N. C.
C. D. Gott Co., 3303 Brainerd Rd., Chattanooga, Tenn.

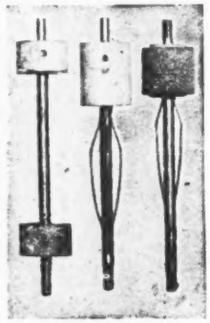
COTTON WARPS

Cotton Yarn and Warps . . Single or Ply . . White or Colored . . Carded . . Combed

Novelty yarns—of cotton, worsted, wool, mohair, rayon — in all fashionable combinations and effects and in many original effects. Write for samples.

Sell Direct

Dana Warp Mills . . Westbrook, Maine



Save Money with "WAYNE" Winder and Redraw Spindles

Hard fibre tips for all types of spindles—require no oiling—renewable at little cost. Use them for cleaner yarn and better wound bobbins. Write for sample of these and other Wayne money-saving textile machine parts and supplies.

Spindles of all types. Wood, head, steel head, cork covered heads and hard fibre or hardened steel top spindles. Let us send you a sample of the type you prefer. Save money by buying from Wayne.

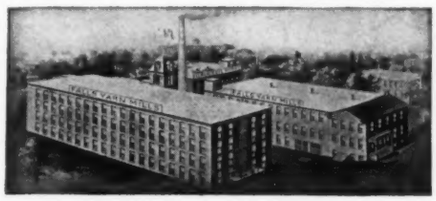
WAYNE MANUFACTURING CO.

HONESDALE, PA.

FALLS YARN MILLS

WOONSOCKET, R. I.

Incorporated 1904



Fine Woolen and Specialty Yarns For Weaving and Knitting

SELL DIRECT

NEW YORK	PHILADELPHIA	CHICAGO
Stanley Porter	Harold R. Shirley	C. M. Patterson
257—4th Ave.	Commercial Trust Bldg.	222 West Adams St.

RAYON TOPS

Standard Grades—Lustrous—Delustred—Superfine

Rayon Noils . . Staple Fibre

ANDREW K. HENRY

158 Summer St. Boston, Mass.

THOS. WOLSTENHOLME SONS & CO. INC.

3300 Frankford Avenue

Philadelphia, Pa.

Yarns for all purposes

French and English Spun Worsted

French Spun Zephyr

French Spun Merino

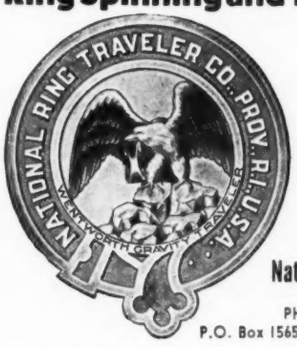
Representatives:—

BOSTON—Perkins & Boland, Inc., 99 Chauncy St.
LOS ANGELES—Arthur Bone, 4436 Worth St.
CHICAGO—C. F. Peffer, 222 W. Adams St.

THE OLDEST AND LARGEST

MANUFACTURER OF

Ring Spinning and Twister Travelers



In the UNITED STATES

American • Hicks • Wilson

United States Standard Wentworth Double Duty and Gravity Travelers

MAKE STRONGER YARN

National-Etartnep Finish
A New Chemical Treatment

Write Us

National Ring Traveler Company

354 Pine St., Pawtucket, R. I.
PHILIP C. WENTWORTH, *Treas.*
P.O. Box 1565, Providence, R. I. Charlotte, N. C.

THINK, TALK, ADVERTISE, SELL *Cotton Freshness*

. . . the new *basic* selling appeal for Cottons, featured every month in the National Advertising Campaign of 12,000,000 cotton farmers and the American Cotton Industry. For FEBRUARY . . . a page advertisement in *Ladies' Home Journal* will talk this basic selling theme for you in HOME SEWING. 2-12

NATIONAL COTTON COUNCIL OF AMERICA
COTTON-TEXTILE INSTITUTE

I'LL MAKE IT OF *COTTON* FOR *Freshness!*

Oil Looms Less Often

Dripping, leaking oils require frequent application. They get onto warps and woven goods and cause oil spot damage which reduces Weave Room production.

Drip-less, waste-less NON-FLUID OIL stays in bearings and off goods. It outlasts oil many times over, so cuts cost of lubrication —increasing production.

Used successfully by 7 out of 10 mills.
Write for instructive bulletin

New York & New Jersey Lubricant Co.

***Main Office:* 292 Madison Ave., New York, N. Y.**

Southern Agent, Falls L. Thomason, Charlotte, N. C.

WAREHOUSES

Chicago, Ill.		Atlanta, Ga.
Providence, R. I.	Detroit, Mich.	Charlotte, N. C.
St. Louis, Mo.		Greenville, S. C.

TRADE MARK REGISTERED

NON-FLUID OIL

IN U.S. PAT. OFFICE & FOREIGN COUNTRIES

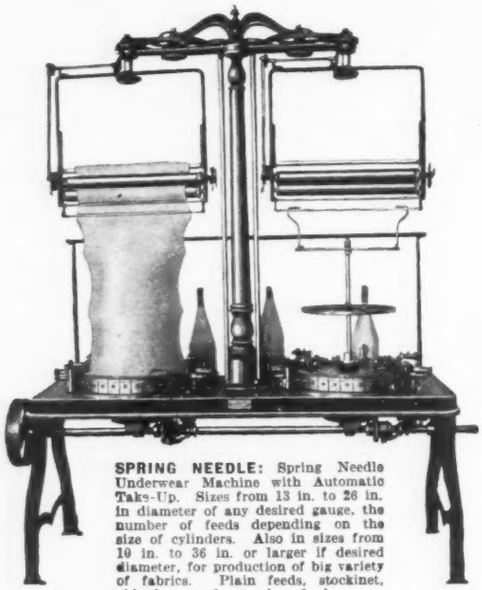
MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

CRANE

KNITTING MACHINES

meet the need for Speed—
for Quality and Low Cost



SPRING NEEDLE: Spring Needle Underwear Machine with Automatic Take-Up. Sizes from 13 in. to 26 in. in diameter of any desired gauge, the number of feeds depending on the size of cylinders. Also in sizes from 10 in. to 36 in. or larger if desired diameter, for production of big variety of fabrics. Plain feeds, stockinet, elderdown and astrachan feeds.

CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is *versatility* . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are Patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

Let us tell you why —and how . . . just ***WRITE***

CRANE Improved Automatic
3 Colored

Improved Automatic 3 Colored Plain Stripes. Made in sizes from 7⅛ in. to 20⅛ in. inclusive, of any desired gauge. Measurements are back to back of cylinder needles. Knit fabrics for bathing suits, theatricals, athletic goods. Crawford stop motion applied when requested.

1870 **CRANE** 1943

MANUFACTURING CO.
LAKEPORT, N. H.

Spring Latch Needle
KNITTING MACHINERY

Perfect Butted Seams for Faster and Smoother Finishing

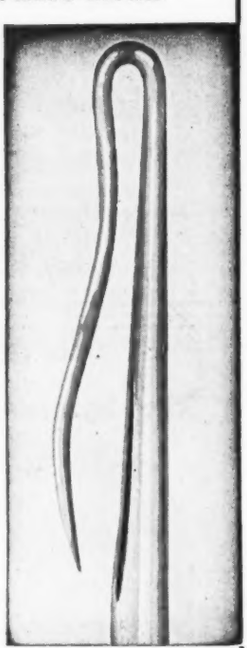
The Rayer & Lincoln Rotary Sewing and Marking Machine, fitted with the latest *Dinsmore Improved Positive Stripping Attachment* and showing the application of the *Merrow Butted Seaming Head.* Sews a strong, flat butted seam, trims the goods evenly with a narrow margin and automatically marks each piece as sewing is done. This machine will save its cost each year—you need it for modern, low-cost finishing. The Merrow Butted Seaming Head can be applied to your present machine—write for estimate of cost.

DINSMORE MFG. CO.
SALEM, MASS.

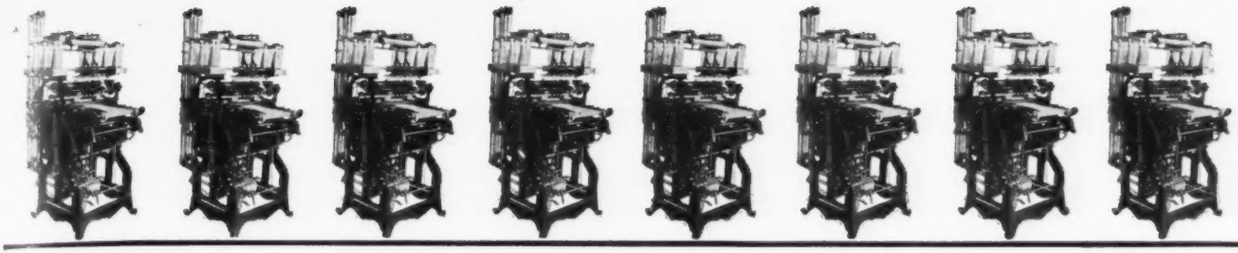
CHARLES COOPER CO., INC.
Bennington, Vermont

Manufacturers of
Quality LATCH and SPRING-BEARD

NEEDLES

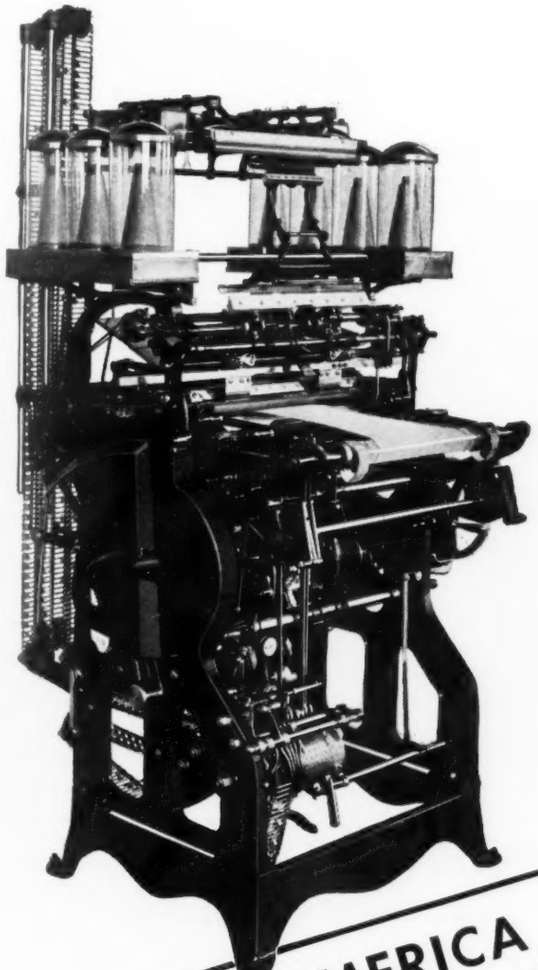


also
***Manufacturers of* THE FAMOUS COOPER CIRCULAR**
SPRING-NEEDLE RIB KNITTING MACHINES



IN THE FRONT LINE...

of Stocking Production . . . and doing a wonderful job, is this



WILDMAN

Single-Head, Single-Unit, Full-Fashioned Hosiery Machine

It knits a perfect stocking from top to toe in one continuous operation, thereby saving the lost time, lost motion and lost production incident to the use of leggers and footers. Man hours are precious these days.

★

Because of war work our production is restricted to supplying repair parts.

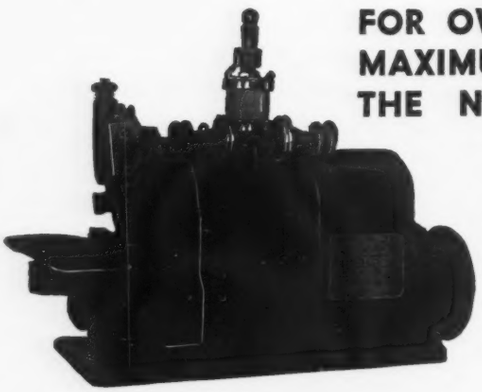
★

for AMERICA
"Throw your SCRAP into the FIGHT"
AMERICAN INDUSTRIES SALVAGE PROGRAM

★

WILDMAN
MFG. CO., NORRISTOWN, PA.

Established 1838 **MERROW** **Incorporated 1894**



FOR OVERSEAMING AND OVEREDGING WITH MAXIMUM EFFICIENCY — MODERNIZE WITH THE NEW MERROW CLASS A MACHINES

The result of several generations of specialized effort in the industrial sewing machine field—combining quality production with high speed and low operating cost to a greater degree than ever before.

WRITE FOR DETAILS AND LET US DEMONSTRATE THESE MACHINES ON YOUR OWN FABRICS.

ALSO PLAIN CROCHET AND SHELL STITCH MODELS FOR ORNAMENTAL EDGE FINISHING AND CLASS 60 MACHINES FOR BUTT SEAMING

200 VARIETIES FOR 200 PURPOSES

THE MERROW MACHINE COMPANY

Starting Its Second Century

2803 LAUREL STREET HARTFORD, CONN., U. S. A.

Acme Products

for seamless hosiery knitting

Speak for themselves

Up-To-Date Machines

Needles

Economy Makers

ACME KNITTING MACHINE & NEEDLE CO.

FRANKLIN, N. H.

THE LOYAL T. **IVES** COMPANY EST. 1874

SPRING BEARD KNITTING NEEDLES

For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines: Slides, Sinkers, Jacks, Guides or Flat Eyes, Slev and Milanese Points, Transfer Points or Quills, etc.

Sheet Metal Specialties to Order

NEW BRUNSWICK NEW JERSEY

RALPH E. LOPER CO.

INDUSTRIAL ENGINEERS

GREENVILLE, S. C. FALL RIVER, MASS.

SPECIALIZING IN TEXTILE COSTS AND OPERATING METHODS FOR MORE THAN A QUARTER OF A CENTURY

COST SYSTEMS
WORK LOAD STUDIES
PAY ROLL CONTROLS
COST REDUCTION SURVEYS
SPECIAL REPORTS

STANDARD SILICATES

KIER BOILING

For better whites and level results, use a pound of STANDARD Grade 40 Silicate with each 3 to 5 lbs. of caustic in your kier boiling formula. Troublesome stains are eliminated and scarce chlorine is saved.

Ask the STANDARD service staff about grey sour-silicate kier boiling procedure for better whites with less bleach.

ALKALI

DIAMOND
ALKALI COMPANY
STANDARD SILICATE DIVISION
GENERAL OFFICES: PITTSBURGH, PENNSYLVANIA
Plants at CINCINNATI · JERSEY CITY · LOCKPORT, N. Y.
MARSEILLES, ILL. · DALLAS, TEXAS

TOMPKINS

CIRCULAR SPRING NEEDLE

KNITTING MACHINES

FOR PRODUCING

UNDERWEAR	OVERCOATS
SWEATERS	TERRY CLOTH
SWEAT SHIRTS	STRIPED CLOTH
DRESS CLOTH	PATTERNS

RUBBER LAY-IN FABRICS

CIRCULAR LATCH NEEDLE

KNITTING MACHINES

FOR PRODUCING

TOQUES	SCARFS
PARKAS	SHAKER CAPS

TOMPKINS BROS. CO.
SINCE 1846 — SYRACUSE, N. Y.

*Reg. U. S. A. and Canada

Eye-appeal, Softness, Daintiness, Wearability and Long Service Life are vividly reflected in any garment milady may wear,—if—the fabrics or fibres have been processed with Scholler Products. Because Scholler has specialized for over 35 years in helping to make good fabrics better, pretty fabrics beautiful. Experience, research, increased facilities and the intimate familiarity with the ever-changing requirements of the consumer are the true reasons for the widely accepted use of Scholler Products.

SCHOLLER BROS., INC.
MFRS. OF TEXTILE SOAPS, SOFTENERS, OILS, FINISHES
COLLINS & WESTMORELAND STS., PHILA., PA. • ST. CATHARINES, ONTARIO, CANADA

ONYX

No crystal ball is needed to learn the future of Rayon. Through such team work as exemplified by Onyx Research—Onyx Laboratories—Onyx Production, in close cooperation with mills and commission dyeing and finishing plants is determined the future of Rayon, particularly in the hosiery field. Experience, work and patience well directed, are gradually surmounting many obstacles. If you have a problem in Rayon, perhaps Onyx can be of help. Your inquiries are solicited.

BUY WAR BONDS AND STAMPS—EVERY DAY

ONYX OIL & CHEMICAL CO.
JERSEY CITY, N. J.

New England Office:
511 WESTMINSTER STREET, PROVIDENCE, R. I.
Charlotte Office:
124 EAST THIRD STREET, CHARLOTTE, N. C.
Mid-Western Representatives:
MAHER COLOR & CHEMICAL CO., CHICAGO, ILL.; LOS ANGELES, CALIF.
In Canada:
ONYX OIL & CHEMICAL CO., LTD., MONTREAL, P. Q.; TORONTO, ONT.

onyx

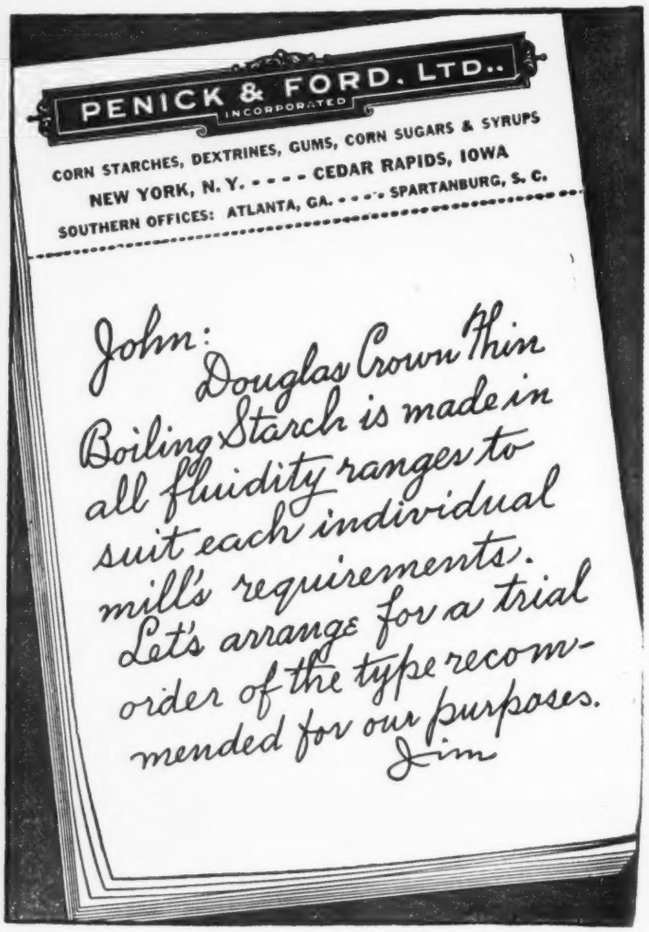
Laurel FINISHES

CAN HELP YOU MEET GOVERNMENT SPECIFICATIONS ★ ★ ★

WHETHER the requisition calls for cotton, wool, rayon, silk or mixtures, there's a Laurel Oil or Finish to help meet specifications and speed delivery. If there's a special purpose compound needed, we shall be glad to suggest formulae. Laurel technicians and research department have for over 30 years sought and found solutions to many textile processing problems. This experience is yours for the asking.

Throw your scrap into the fight!

SOAPS OILS FINISHES
Laurel SOAP MANUFACTURING CO., INC.
WM. H. BERTOLET'S SONS ESTABLISHED 1909
TIOGA, THOMPSON & ALMOND STS., PHILADELPHIA, PA.
WAREHOUSES: PATERSON, N. J., CHATTANOOGA, TENN., CHARLOTTE, N. C.


PENICK & FORD, LTD., INCORPORATED
CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS
NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA
SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.
John: Douglas Crown Thin Boiling Starch is made in all fluidity ranges to suit each individual mill's requirements. Let's arrange for a trial order of the type recommended for our purposes.
Jim

WHITER WHITES

For 1943...

Use a PQ *clear* Silicate, and save—less supervision, fewer rejects. May we help you select the one best suited to your plant requirements?

FOR PEROXIDE BLEACHING STAR Brand, 42° Baumé ($Na_2O \cdot 2.50SiO_2$). Brilliantly clear. No. 1 silicate of soda for purity and stability. Reserve alkalinity.

FOR KIER BOILING "TN" Brand, 41° Baumé ($Na_2O \cdot 3.22SiO_2$). Clear. For processes where a silicate of less exacting purity is satisfactory.

Conveniently available in drums or tanks. Samples & prices on request.

PHILADELPHIA QUARTZ CO.

Gen'l Offices and Lab.: 125 S. Third St., Phila.
Chicago Sales Off.: 205 W. Wacker Drive.
Distributors stocks in over 65 cities

PQ SILICATES OF SODA

39 WAYS

TO SPEED YOUR MAINTENANCE WORK:

Within the covers of this interesting, fact-filled Oakite Digest, you will find described 39 important mill maintenance jobs!

Each is a job which many mills are now doing faster, easier or at less cost because of an Oakite method that saves time . . . or effort . . . or provides some other worthwhile benefit. Each is a job where specialized Oakite materials offer you the same time conserving money-saving opportunities!

SEND FOR YOUR FREE COPY TODAY!

Why not ask for your copy? The chances are that here you will find several sound, practical suggestions to help you put all your maintenance work on a more effective, low-cost basis. Write . . . no obligation, of course.

OAKITE PRODUCTS, INC., 42 Thames Street, New York, N. Y.
Representatives in All Principal Cities of the U. S. and Canada

OAKITE MATERIALS · METHODS · SERVICE — Buy Bonds for Victory — **CLEANING** FOR EVERY CLEANING REQUIREMENT

War problems helped by **HOOKER**

ACHIEVING UNIFORMITY

Only with consistent quality in the chemicals they use can producers and processors of textiles meet exacting government standards for their fighting fabrics.

HOOKER Chemicals

dispose of these problems by unvarying adherence to specifications in every carboy, cylinder and drum. At your service also are HOOKER technicians to assist on any question within their fields.

HOOKER chemicals for the textile industry include caustic soda, chlorinated paraffin, ferric chloride solution, lauryl pyridinium chloride, para nitro benzoyl chloride, sulfuryl chloride, sodium sulfhydrate, and many other inorganic and organic intermediates.

VICTOR

KEEP 'EM WEAVING WITH

MILL STARCH

The Weaver's Friend

- Always Uniform
- Dependable
- Carries Weight Into the Fabric
- Penetrates Thoroughly
- Boils Thin

Distributed by
CLAUDE B. ILER
Southern Manager
GREENVILLE, S. C.

F. M. WALLACE
HOMEWOOD, BIRMINGHAM, ALA.

C. C. SWITZER — GREENVILLE, S. C.
L. J. CASTILE — CHARLOTTE, N. C.

The Keever Starch Company, Columbus, Ohio

RAPIDASE

THE STANDARD DE-SIZING AGENT

for cottons, rayons and mixed goods

For your de-sizing problems— our technical men are at your service . . . Write or 'phone.

WALLERSTEIN COMPANY, INC.
180 MADISON AVENUE, NEW YORK

ROME SOAP MFG. CO.

WRITE US FOR SAMPLES AND QUOTATIONS

MANUFACTURERS OF
Textile, Laundry
and
Special Soaps
ROME, N. Y.

D. R. KENYON & SON

RARITAN, N. J.

TENTERING and DRYING MACHINERY

MINEROL

The OUTSTANDING Conditioner for Textile Fibres

- Helps separate long fibres from short
- Prevents waste by saving *good fibres*
- Makes fibres more supple, pliable
- Provides control of conditions caused by static electricity
- Protects cards and preserves the wire
- Safeguards health, insures better working conditions by preventing Dust and Fly

SERVING THE TEXTILE INDUSTRY FOR 68 YEARS.
ORIGINATORS OF THE BRETON MINEROL PROCESS FOR CONDITIONING FIBRE.

BORNE SCRYMSER COMPANY
ELIZABETH • NEW JERSEY

JOIN US WE HAVE TOPPED OUR 10% WAR SAVINGS BONDS EVERY PAY DAY

Coming...

TEXTILE WORLD's

75th ANNIVERSARY NUMBER

JUNE, 1943

FULLITIN

1. Used in place of soap for fulling, it eliminates the lengthy soap boiling operation.
2. Used with soap, it prevents congealing, eliminating stuck places, creases and whiplashes.
3. Permitting the use of stone cold soap, it prevents the troubles that hot soap causes.

Sample on request.

ERNST BISCHOFF CO., Inc.
IVORYTON --- CONN.

SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:

10 cents a word, minimum charge $2.00.

(See ¶ on Box Numbers.)

POSITIONS WANTED (full or part-time salaried employment only), ½ above rates.

PROPOSALS, 50 cents a line an insertion.

INFORMATION:

BOX NUMBERS in care of any of our New York, Chicago or San Francisco offices count 10 words additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED—RATE PER INCH:

The advertising rate is $5.75 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page. T.W

NEW ADVERTISEMENTS received by 10 A. M. January 29th will appear in the February issue, subject to limitations of space available.

POSITIONS WANTED

INDUSTRIAL ENGINEER with background of proven results wishes to contact four medium mills of non-competitive nature. This is an opportunity for concerns who do not require a man full time on Labor, Wage Incentive, Costs and Manufacturing problems. PW-215, Textile World, 330 W. 42nd St., New York, N. Y.

TEXTILE SCHOOL GRADUATE 40 years old, 12 years in slashing on viscose and acetate rayon and preparatory departments, good knowledge of chemistry looks for position in same. PW-203, Textile World, 330 W. 42nd St., New York, N. Y.

FOR SALE

SACRIFICE: TROY TUMBLER, 42x60, 2 pockets. Motorized with reverse control box. Levitt, 1321—61 St., Brooklyn, N. Y.

A Sales Connection that is Unusual

1. A position with a company that is the oldest and largest of its kind in the world—whose product is not adversely affected by depressions or war conditions. On the contrary, our business today is excellent and as a result our men are making more money today than they ever have. We are serving the war industries and directly aiding in increasing production in these companies.

2. The people who are prospects for what we have to offer are of a very high type and consequently it is a pleasure to call on them. Inasmuch as our company enjoys a splendid reputation and our product is essential, we are more than welcome in the eyes of our prospects, especially in these times.

3. Our compensation plan is of such a nature that our men average from 80% to 90% in commissions. It also provides for a substantial amount of insurance as well as an attractive vacation. Annual earnings average about $4,000. Earnings start immediately from the day you go on the job—even while in training. You will be thoroughly grounded in our policies and field trained in our work. Since the business is established, and you get the benefit of business already in effect, maximum earnings are possible from the beginning.

4. Stability is a keynote in our company. Many of our men have been with us from 10 to 20 years. Several have passed the 25-year mark.

5. Company policy is to promote from within. Our District Managers, General Sales Manager and many other executives started in a similar position to the one being offered.

6. A car is essential, but the amount of traveling required is small. Desired age limit is 35 to 50, preferably married, good education required and previous sales experience is desirable. United States citizenship necessary.

If you are interested in learning more about this connection, write

SW-219, Textile World

330 West 42nd St., New York City

Over Forty Years of Dependable and Confidential

EMPLOYMENT SERVICE

for textile mills, converters and selling houses requiring managers, superintendents, stylers, designers, salesmen, overseers, second hands, fixers, etc. 'Phone, wire or write us your personnel requirements.

CHARLES P. RAYMOND SERVICE, Inc.

Phone: Liberty 6547 **294 Washington Street, Boston, Mass.**

WANTED

WOOLEN MILL SUPERINTENDENT

with successful record as manager and producer, preferably one with good foundation in raw stocks.

Our mill is running mostly on Government work. It is modernly equipped and conveniently located in the East. Salary $7500 per year.

Give full details with references in application.

P-204, Textile World

330 West 42nd St., New York City

FOR SALE

WOOLEN MILL

Twelve set woolen mill in New England. Now in operation. Fully equipped for all types of woolen fabrics. Equipment and buildings in first class condition. A real opportunity. Inspection by appointment. Write to:

CYRUS C. HOFFMAN

535 5th Avenue New York, N. Y.

WANTED

WANT TO BUY

#50 UNIVERSAL WINDERS

Complete or partly completed from any mill.

Send prices and details.

W-218, Textile World

330 West 42nd St., New York City

PROFESSIONAL SERVICES

LANCASTER, ALLWINE & ROMMEL

Interesting booklet concerning Inventions, Patents, Trade-Marks and Copyrights, together with Schedule of Government and Attorney's Fees, sent without obligation. Simply ask for "booklet and schedule."

Established 1915

Patents & Trade-Marks

Suite 448, 815—15th St., N.W. Washington, D. C.

Each of these advervisements

represents a current WANT of an individual or concern, in the textile industry with some element of profit in each, for both buyer and seller.

Some are employment opportunities; others offer solutions to pressing production problems; still others offer good used equipment.

"Searchlight" advertisements are constantly changing. New opportunities find their way into this great WANT medium, each issue. Regular reading of the "Searchlight" pages can be as important to you as reading the editorial pages. One is news of the industry, the other—NEWS OF OPPORTUNITIES currently offered in the industry.

for

EVERY BUSINESS WANT

Think* "SEARCHLIGHT" *First

An Open Letter to
O.P.A. · W.P.B. · B.E.W.
and All Other Government Departments

★ FOR years we have been endeavoring to serve all branches of the Textile Industry with the equipment and supplies needed by them. Now—this tough war has made it necessary to limit the use of equipment and to first supply those who are aiding in the war effort.

Realizing the enormity of the task before our government, we address this open letter to you to emphasize our determination to assist you in any way possible to place productive equipment where most urgently needed to help shorten the war.

We realize that anything we can do is but a small contribution but this we do want to make. Just call on us—WE ARE READY.

MACHINERY LIQUIDATING COMPANY
OPA REGISTRATION NUMBER 789

AVAILABLE FOR IMMEDIATE DELIVERY

A wide assortment of equipment and Supplies for all branches of the textile industry.

Opening and	Preparatory
Carding	Knitting
Spinning	Bleaching
Twisting	Dyeing
Winding	Finishing
Weaving	

Send us your requirements

WAR RESTRICTIONS IMPOSE MANY LIMITATIONS

We are here to serve your war production needs and to facilitate your securing with the least possible delay the equipment and supplies you need for efficient operation.

More than ever we realize *our* responsibility. Send us a list of your requirement.

IDLE MACHINES HELP THE AXIS

Make your idle equipment available for "winning the War"

We have too many requests for equipment to list them here. But you may have just the equipment some war plant may need. We can put your idle equipment to work immediately. Send us complete details. Put it to work.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

DOMESTIC • **DEALERS IN QUALITY USED MACHINERY** • ***EXPORT***

31-33 West 42nd Street — New York, N. Y.
Telephone: PEnnsylvania 6-8014 — Cable Address: "LIQUIDATE" New York

Established 1923 — ***Also: Inspecting, Appraising, and Liquidating***

Quality Used Mill Machinery for Cotton, Silk, Rayon, Wool; Bleaching — Dyeing — Finishing

LIQUIDATING

Quidnick Plant

NEWPORT FINISHING CO.

Quidnick, R. I.

NOTE: In excess of $200,000.00 New Dyeing & Finishing Equipment purchased since 1939.

Werner & Van Vlaanderen Stainless Steel Dye Jiggs.
Perkins Hydraulic Calenders.
Werner & Textile Dye Padders.
Werner High Speed Tubers.
Van Vlaanderen Palmer Tenter Units.

Tolhurst & V. V. Centrifugal Extractors.
Werner & General Dye Becks.
National 12 Fan Loop Dryer.
V. V. Tenter Frames with Housing.
Complete Auxiliary Equipment.

Representatives available at the plant

Quidnick is 12 miles from Providence, Rhode Island.

Plant telephone is Valley 1728. Plant mailing address: Box No. 72.

REPUBLIC TEXTILE EQUIPMENT CO., Inc.

Refinancing • Appraisals • Purchase • Sale • Liquidation of Mill Properties

Purchase and Sale of Used Machinery

Sales Office: 40 WORTH STREET • NEW YORK

L. J.

McCAFFREY

& SON, INC.

FOR SALE

HEDDLE FRAMES

14" WORSTED FRAMES

METAL END	WOOD END
300—58"	600—70"
450—70"	25—76"
100—71"	160—78"
70—79½"	434—80"
40—80"	219—81"
181—85½"	32—85"
94—86"	30—86"
35—91"	10—88"
	40—98½"
	52—105½"
	16—110½"

10-12" COTTON FRAMES

METAL END

10" FRAMES	12" FRAMES
600—44"	200—41"
100—46"	200—42"
100—48"	100—44"
500—58"	150—47"
2200—62"	500—48"
350—66"	450—49"
	150—50"
	275—56"
	1500—66"
	250—68"

BOX 495 PAWTUCKET, R. I.

WE OFFER FOR SALE

New SILVER KING 12" x 36" Vulcanized Fibre Roving Cans in quantity lots.

33—DRAPER TWISTERS, 200 spindles each, 3" gauge, 2¼" ring, tape driven; equipped with separators—1922-1924 model. Excellent condition.

A. F. FYANS

Textile Machinery

P. O. Box 454 Fall River, Mass.

FOR SALE

MODERN EQUIPMENT FOR HUNDREDS OF USES

ALL IN STOCK HERE IN N.Y.C.

6—HASKEL DAWES 2 spindle FORMERS. 8"x10".
1—HASKEL DAWES 12 spindle Twisters. 5"x7".
1—Brownell 36 spindle Flyer Twister for Paper twines.
4—Luther make, single brush 98 spindle Yarn Dressing machines.
7—12 spindle Ball winding machines. 8" gauge.
10—20 spindle Ball winding machines. 5" gauge.
2—Foster make. 40 spindle skein to 6" tube winders.
40—Universal #50 Tube winders, 6 sp. each.
25—Tisch & Ruf flat Knitting machines. for making fringes, Rugs, Curtains, cloths, materials, hair nets, veilings, etc.
35—Flat Rachelle Knitting machines, Lindlay make, 60" & 84" for making Nettings of all types, cloths, etc.
150—16 carrier N. E. Butt round Braiders. For rugs, wire, etc.
100—24 carrier Butt and Textile make Braiders. For rugs, wire, etc.
Twisting and spooling machines of various types.
1—40" Paper slitter machine.
2—Whitin Quillers 378 spindles. $1. per spindle.
300—Flat braiding machines, all sizes.
4—12x14 Haskel Dawes 2 sp. Formers.
1—Haskel Dawes 4 ply Rope twister.

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9—Rice, Barton & Fales 3 to 8 Color Print Machines, 40" to 64" wide, with color pans, mandrels, star and furnisher gears, etc.

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2—Van Vlaanderen Ball Bearing Calendars, 50" face.
2—Morrison Ball Bearing Calendars, 50" & 60" face.
1—Morrison 3-Roll 64" Ball Bearing Calendar.

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3—Morrison & Van Vlaanderen 60" & 72" Palmer Quetch Units.

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1—Ager, 6' wd. 9½' high, 30' long, brass rolls, ball bearing.

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2—Textile 200-gallon Copper Jacketed T Tilting Agitated.
2—Textile 100-Gallon Copper Steam Jacketed Tilting Agitated.
2—Textile 70-Gallon Copper Steam Jacketed Tilting Agitated.
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3—National Loop Dryers, 28', 33' and 65' long.
2—Proctor & Schwartz Airlay Dryers.
2—Van Vlaanderen 50" & 66", 5 & 7-Tier Dryer, fin heaters.

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1—3-Roll Print Padder, consisting of Drying Tower with Unit Heater.

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1—Charlotte Homogenizer or Colloid Mill.
1—10" Premier Colloid Mill.
1—Premier 6" Colloid Paste Mill.

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1—Battery 4-Butterworth Stainless Steel lined Dye Jiggs, 45" face.
3—Werner 50" Stainless Steel Lined Jiggs.
1—Werner 57" Stainless Steel Lined Jigg.
4—Lincoln 50" Dye Jiggs.

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300—Drying Cans, 50" to 108" face, 23" to 50" diameter.

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1—Sargeant 3-Bowl Skein Scouring Mchn.
10—Klauder-Weldon Skein Dyeing Machine 20, 28, 30 sticks, hoist type.
1—Obermeier Package Dyeing Machine.
1—Obermaier 400# Vertical Package Yarn Dyeing Machine, with Wash-Off Kettle and two motor driven Centrifugal Pumps.

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2—Windsor & Jerauld 50' Frames with Morrison stainless steel clips, 44" & 54" wide.
3—Van Vlaanderen and Windsor & Jerauld 60' & 70' Frames.
1—Morrison 90' Tenter Frame.

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1—Phila. Dry Machine Co. Hurricane Continuous Skein Dryer.
4—Frank Bailey Truck Dryers with extra trucks, for skein and tubed yarn.

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6—Rodney-Hunt Fulling Mills, Gear Drive.

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3—Parks & Woolson 46" & 66" Doubling, Reeling and Measuring Machines.

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6—Elliott & Hall Flat Folders, 42" to 60" wide.

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2—Rodney Hunt 10' Rope Soapers.

SHEARS

3—Parks & Woolson Double Blade Shear, 66" with list saving device.
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2—Bleach House Jay Pilers.
10—Bleaching 4-5 Ton Kiers, vomit type.
1—5-Ton Kier, Circulating type, with external heater, pump and motor.
2—Lincoln Double Roll Chemical Squeeze Rolls.
2—Arlington Rope Squeezers with clutch pulley drive.

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18—Werner 50" Rubbing Machines.
1—Werner 50" Felt Disc Rubbing Machine.

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10—Tolhurst, American Laundry, Adams and Troy Copper Lined Basket Extractors, self balancing, 40" 32", 28", 26" and 20".

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CASE HISTORY NO. 5

A New York State Dyer hurriedly contacted us regarding his extractor motor which burned out. We had a machine of the same type available in stock, and loaned him the motor for same. He was able to resume production on the same day, with little or no loss of time.

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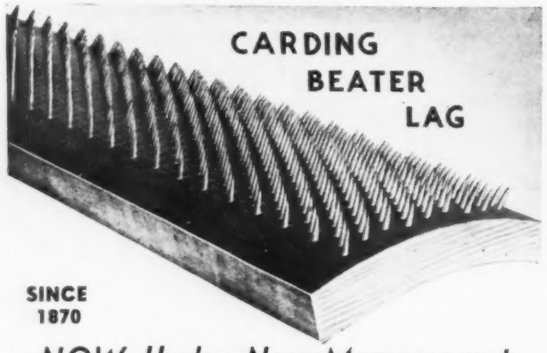

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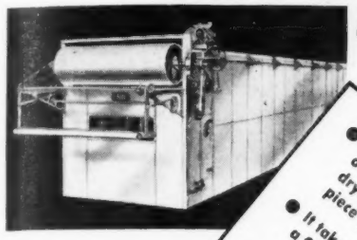

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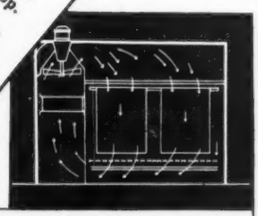

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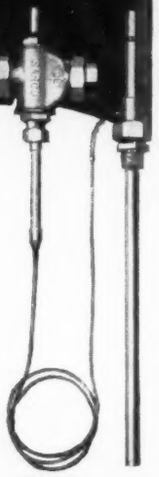

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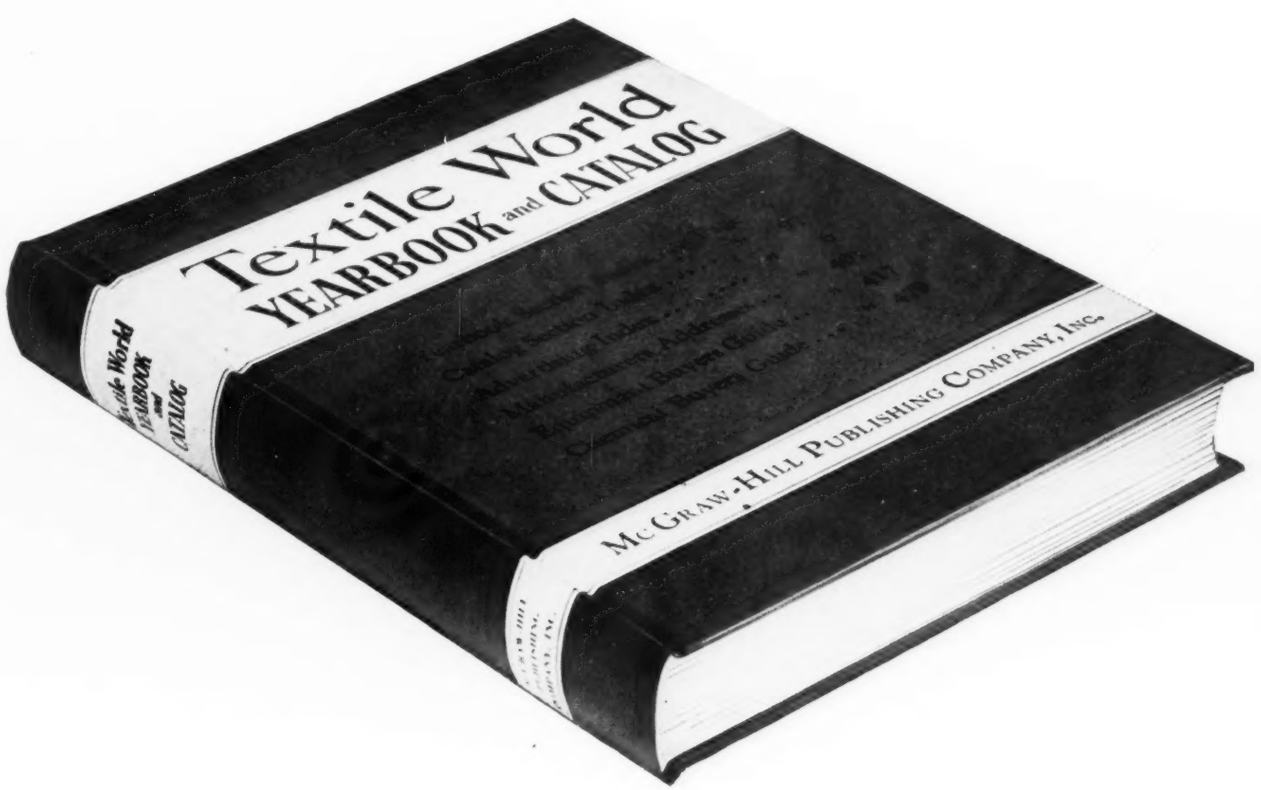

"The Yearbook with the Orange Band"

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